THE AMERICAN NEPTUNE

A QUARTERLY JOURNAL OF MARITIME HISTORY

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THE AMERICAN NEPTUNE

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A Quarterly Journal *of Maritime History*

VOLUME XIX JULY 1959 NUMBER 3

I THINK *that all of our readers will be pleased to know that the rise in subscription price of* NEPTUNE *has not affected the number of our subscriptions at all. There have been no more than a handful of cancellations related to the increase. Moreover, our subscribers have contributed to date, in addition to their subscriptions,* $417 *to help the* NEPTUNE *catch up on current bills. Besides this we have received subsidies on one article and one of our pictorial supplements. All of this is most encouraging, especially when many of our subscribers have written us personal letters saying that they thought we did just right in increasing the subscription price and heartily approving the action.*

We regret to report that Richard Orr, who has been on our Editorial Advisory Board since the founding of the AMERICAN NEPTUNE *as our expert in the model-making field, has died. Dick Orr was one of the very best of the modern model builders and examples of his work are to be seen in all of the leading maritime museums, as well as in many distinguished private collections. One of the last pieces of work he did was the magnificent model of the yacht* Cleopatra's Barge *for the Peabody Museum, which also owns a fine model by him of the clipper ship* Red Jacket. *I neglected to notice earlier the death of another man prominent in the maritime field who was never connected with the* NEPTUNE

but was so well known that we should pay tribute to his life's work. Charles Robert Patterson died last autumn. He was born into a shipping family in Southampton, England, in 1878, *and as a young man spent many years at sea on some of the last of the big square-riggers. Later he studied art and became one of the foremost painters of sailing ships. His work has been well known and popular for many years, and his experience as a deep-water, square-rig sailor lent authenticity to his canvases.*

This year brings anniversaries of two of the most famous early seventeenth-century explorers of North America. In July 1609 *the great French explorer, Samuel de Champlain, ascended the Richelieu River and entered the lake that bears his name, and in September of the same year the Englishman, Henry Hudson, while in the employ of the Dutch East India Company, sailed his eighty-ton ship* Half Moon *into New York Harbor and navigated the Hudson River for one hundred and fifty miles to the present site of the New York state capital at Albany. Extensive celebrations are being planned in connection with the three hundred and fiftieth anniversaries of both of these momentous events.*

In this number we take pleasure in presenting the first part of an article, 'Origins of Fore-and-Aft Rigs,' by Richard LeBaron Bowen, Jr., who has done so much research over the past ten years on the subjects of sails and primitive watercraft. This evolutionary type study significantly enough falls on another anniversary, as 1959 *is the centenary of the publication of Charles Darwin's* Origin of Species, *a work which resulted from his observations made on the famous voyage of* Beagle. *Dr. Bowen's article is the first attempt to tie all of the various sail forms and rigs found throughout the world into a coherent single picture. It is a work that we trust may stimulate further efforts in allied nautical fields.*

ERNEST S. DODGE

Peabody Museum of Salem

The Origins of Fore-and-Aft Rigs

PART I

*BY RICHARD LeBARON BOWEN, JR.**

I

WE are concerned in this essay with the invention of fore-and-aft sails and lug and lateen sails, their evolution, and their diffusion about the world. This has often been attempted before, but usually only segments of the whole picture have been treated. Most writers can be accused of taking a Ptolemaic rather than a Copernican outlook.[1] Until recently all fore-and-aft sails have been considered late inventions of the West. To decide properly who invented what, the sails of the East and the West must be considered together in their whole range of time.[2]

There are three basic types of fore-and-aft sails: the spritsail, the gaff sail, and triangular sails such as the leg-of-mutton, the Bermudian, and the 'Marconi.'[3] Previously the Dutch have been credited with the inven-

* In writing this essay the author is very grateful for the invaluable assistance given by Professor George F. Carter, who suggested that the distribution maps be added, among other things. He is also indebted to Professor Lionel Casson for collaborating on certain parts of this study dealing with Greek and Roman times. The writer also wishes to express thanks to Marion V. Brewington and Howard I. Chapelle for their timely suggestions and criticisms.

[1] The Greek geographer Ptolemy maintained that the earth was the fixed center of the universe and that the sun and the stars revolved about this center. Early in the sixteenth century Copernicus suggested that the earth revolved about its own axis and that the planets revolved about the sun.

[2] For a complete understanding of the present problem, the reader is referred to the author's recent analysis of the sails of the East, since an attempt has been made here not to repeat any material published in R. LeB. Bowen, Jr., 'Eastern Sail Affinities,' AMERICAN NEPTUNE, XIII (1953), 81-117, 185-211.

[3] According to H. Patterson, *Patterson's Nautical Dictionary* (New York, 1891), p. 70, 'Fore-and-aft sails' are 'sails which set upon gaffs and booms and stays.' Webster's Dictionary defines a fore-and-aft sail as 'Any sail not supported by a yard or yards, usually carried on a gaff, or stay, with or without a boom.' In this article only those sails fitting this definition will be called 'fore-and-aft sails.' Many writers have included all lug and lateen sails under the heading of fore-and-aft sails for various reasons. This is not technically correct. The important point is that a true fore-and-aft sail is usually pivoted at its leading edge (luff), so that the craft may be tacked head-to-wind by simply bringing the bow of the vessel across the wind. There are some lug and lateen sails which can be tacked head-to-wind in a similar manner because the main area of the sail is behind the mast. However, others such as the Arab lateen cannot, and must be tacked downwind by wearing or head-to-wind by dipping the yard.

In their primitive forms lug sails are more closely related to square sails than they are to fore-and-aft sails. Admittedly lug sails may be *set* fore-and-aft with the vessel. But so can a square sail. When sailing downwind some lugs (those with the yard hung from the center) may be set square to the

tion of all these fore-and-aft sails, along with the triangular jib. Recently Lionel Casson has shown that the European spritsail was commonly used in the Eastern Mediterranean during Roman times (Fig. 1).[4] Rather than

Fig. 1. Spritsails. A, Indonesian spritsail typical of that used on the single outriggers of Ceylon. The outrigger is always kept to windward when sailing into the wind, the tack of the sail being made fast to the end of the canoe which is pointed into the wind. B, European spritsail shown on a Roman relief probably depicting a scene at Ostia, port of ancient Rome. *(Drawing by the author from a photograph.)* C, European spritsail found on craft of the Yangtze River in China. The Chinese system of multiple sheets has been applied to the after edge of the sail. (*After Worcester,* Junks and Sampans of the Yangtze.)

boat so that they are identical with square sails, except for their shape. Like the square sail, there is no danger of gybing such a sail. These sails are also similar to square sails in that they cannot be sailed to windward with any degree of success when the sail is backed against the mast.

In the title of this article I use the term 'Fore-and-Aft Rig' to cover fore-and-aft sails and lug and lateen sails, as opposed to the square rig. 'Rig' is the distinctive arrangement of the masts, sails, and rigging in any boat, irrespective of hull design. But I still use 'fore-and-aft sail' in its strict sense. My use of the term 'fore-and-aft sail' to exclude lug and lateen sails is contrary to some modern usage, for W. A. McEwen and A. H. Lewis in their *Encyclopedia of Nautical Knowledge* (Cambridge, Maryland: Cornell Maritime Press, 1953) include lugs and lateens under fore-and-aft sails. It is interesting that the authors of this work apparently noticed that some definitions exclude lugs and lateens from fore-and-aft sails by saying 'any sail not set on a yard.' To get around it they modified this qualification to: 'any sail that is not set from, or spread by, a yard or horizontal spar fitted with braces' (Ibid., p. 179). Many lugs and lateens have vangs and purchases on the forward end of the yard. These are fundamentally 'braces.' There are also square sails without braces. Are we to include all square sails which do not have braces under fore-and-aft sails, or do we include lugs with vangs under square sails? Obviously the answer is no.

This distinction between fore-and-aft 'rig' and 'sail' is not new. It has been used previously by E. P. Morris in his *The Fore-and-Aft Rig in America* (New Haven: Yale University Press, 1927). That Morris made the same distinction between fore-and-aft 'rig' and 'sail' is shown by his remarks on the spritsail following a description of the lug and the lateen: 'The spritsail was the earliest pure fore-and-aft sail' (Ibid., p. 29). E. K. Chatterton has also made this same distinction in his *Fore and Aft* (London: Seeley, Service & Co., 1912). Later writers have not noticed this distinction between 'rig' and 'sail' and have mistakenly included lugs and lateens under fore-and-aft sails.

[4] L. Casson, 'Sails of the Ancient Mariner,' *Archaeology,* VII (1954), 215-219; L. Casson, 'A Sea Drama in Stone,' AMERICAN NEPTUNE, XV (1955), 217-219; L. Casson, 'Fore-and-Aft Sails in the Ancient World,' *Mariner's Mirror,* 42 (1956), 3-5. The validity of Professor Casson's ancient spritsails has been challenged by L. G. LaRoerie, 'Fore And Aft Sails in the Ancient World,' *Mariner's Mirror,* 42 (1956), 238-239. Casson's views were defended by this writer in R. LeB. Bowen, Jr., 'Fore-And-Aft Sails in the Ancient World,' *Mariner's Mirror,* 43 (1957), 160-164.

just a single spritsail from Roman times, he has come up with four distinct examples which can be dated from the first to third centuries A.D. One of these (Ostia, shown here in Fig. 1) had previously been illustrated in a line drawing by F. Moll,[5] but unfortunately the sprit was not shown, so the sail looked like a peculiar square sail or gaff sail. It is remarkable that these Roman spritsails have never been recognized as such before. I regard Professor Casson's disclosure that fore-and-aft spritsails were used in Roman times as the most important advance in the history of sails in at least the last quarter century. Today in the Eastern Mediterranean the spritsail is centered around the Bosphorus, having been displaced in Italy and most of the Aegean islands by the lateen and the lug sail.

Professor Casson says that he is restoring credit for the invention of the European spritsail where it belongs—to the ancients of the Eastern Mediterranean. In this article I will attempt to pass the credit farther east to the Indonesians. My evidence will in no way be as conclusive as Professor Casson's, since it is of a circumstantial nature. And one might be justified in suggesting that my arguments are academic, since the Indonesian spritsail is not *identical* to the European spritsail. Therefore, if the Indonesians did originate the basic spritsail design as I hypothesize, the ancients of the Eastern Mediterranean modified it to the form in which it is known throughout Europe and Asia Minor today.

I have shown that a form of spritsail is to be found in the Indian Ocean on outrigger canoes and primitive boats.[6] The Indian Ocean spritsail is found at Madagascar, Yemen, and Ceylon (Fig. 1). It is very probable that Indonesians (Javanese and/or Sumatrans) introduced this sail to the Indian Ocean, since an identical sail is found in Sumatra on an outrigger, and since it is found in Ceylon and Madagascar on outrigger canoes (Fig. 2). For simplicity we will call this sail the 'Indonesian' spritsail in this article.

Ferrand estimated that the peaceful penetration of Java and Sumatra by Indians began not later than the fourth century B.C.[7] A migration of Indonesians to Madagascar probably occurred soon after Indians settled in Java, because few Sanskrit words are found in the old Malagasy (Madagascarene) dialects, while many are incorporated in modern Javanese. Ferrand deduced that a second migration to Madagascar from Indonesia took place in the tenth century.

[5] F. Moll, *Das Schiff in der bildenden Kunst* (Bonn, 1929).

[6] R. LeB. Bowen, Jr., 'Eastern Sail Affinities,' AMERICAN NEPTUNE, XIII (1953), 84-87. The Indian Ocean spritsail was termed the 'proto-Oceanic spritsail' in this 1953 article because it undoubtedly led to the development of the 'Oceanic spritsail,' a name given to a triangular (and sometimes quadrilateral) fore-and-aft sail used in the Pacific.

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Pliny has enabled us to deduce that the spritsail was introduced to Ceylon before the start of the Christian era. Pliny (VI, 24) described the craft which plied the waters between South India and Ceylon and related that

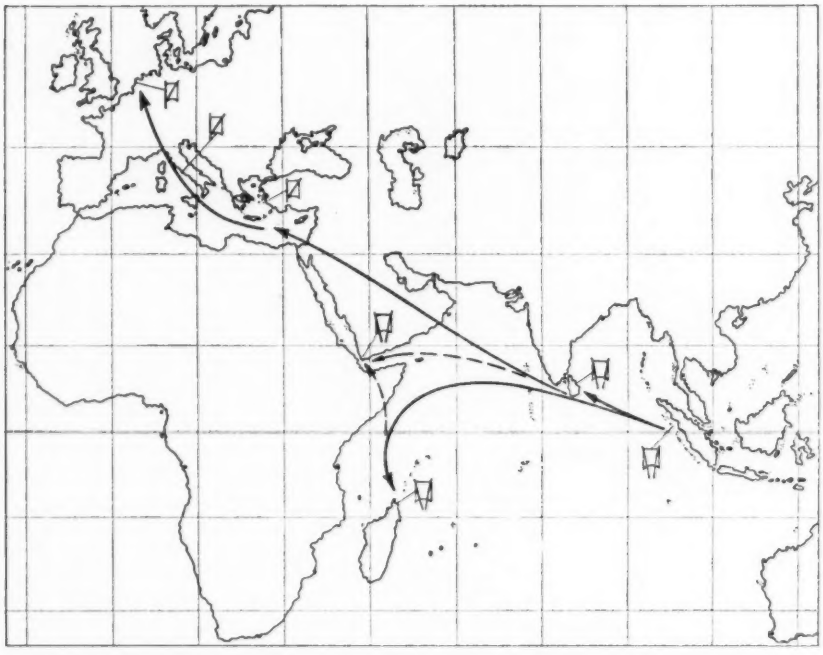


Fig. 2. Distribution of Indonesian and European spritsails. The Indonesian spritsail probably originated in the vicinity of Indonesia. It was spread to Ceylon, Madagascar, and Arabia by the westward migrations of Indonesians. The idea of the spritsail was probably carried back to the Mediterranean by Graeco-Roman sailors, for it was found (as the European spritsail) in Asia Minor and Italy during Roman times. It later spread to Holland and England.

they had prows at either end for sailing in either direction. He stated that previously the craft of Ceylon had been made of rushes and rigged in a manner familiar on the Nile. Presumably this meant a square mat sail on some sort of a reed bundle boat. Today the common craft of Ceylon are single outriggers 'with prows at either end' equipped with an Indonesian spritsail. These are sailed 'in either direction' to keep the outrigger to windward. It is indeed remarkable that we are able to date the introduc-

tion of this craft (and sail) to Ceylon at somewhat before the start of the Christian era from Pliny's description, which was undoubtedly taken from earlier Greek sources. The introduction of this rig can therefore be correlated with the first westward migrations of Indonesians before the start of the Christian era.

One of the characteristics of the outriggers of Ceylon is the stationary mast fixed in the center of the craft. When sailing in one direction the tack of the sail is made fast to the bow of the craft and the sprit is aft of the mast. When sailing in the other direction the tack of the sail is fastened to the other end of the canoe and the sprit is placed aft of the mast where the bow was (Fig. 1). These craft all have single outriggers, and the outrigger is always kept to windward. For maximum speed live ballast is moved out on the outrigger booms so that the outrigger float just skims along the surface of the water.

It might be suggested that the spritsail was carried from the Mediterranean to the Indian Ocean by Western mariners. Roman maritime domination of the Indian trade did not start until the first century A.D., although Roman subjects undoubtedly sailed to India before the start of the Christian era.[8] Greek mariners had sailed from Egypt to India in the first century B.C., probably as early as 100 B.C. The Mediterranean spritsail can be dated from the first to the third centuries A.D., but there is no reason why it could not have been used earlier in the first century B.C.

Thus it appears that the spritsail was known both in the Mediterranean and the Indian Ocean by the start of the Christian era. It could have been carried from either one to the other by Greeks or Roman subjects in the early centuries before the Christian era. However, the distribution of the sail in the Indian Ocean seems to indicate that the sail could not have been introduced from the Mediterranean at the start of the Christian era by Roman subjects. We have mentioned that the distribution of the spritsail in the Indian Ocean can be correlated with migrations of Indonesians. Further, in all but one instance the spritsail is associated with outrigger canoes. If the sail were introduced from the Mediterranean in Roman times, it is very difficult indeed to see why its use would be restricted to outriggers.

There are several other factors which are against an introduction from the Mediterranean. The European spritsail rig of Roman times had a sturdy stationary mast forward and the tack of the sail was fixed aft of the

[8] Sir Mortimer Wheeler, *Rome Beyond the Imperial Frontiers* (New York: Philosophical Library, 1955), pp. 148-150. The trade with India was mainly in the hands of the Greek merchants from Alexandria, Egypt. I will call the Greek sailors involved in the India trade 'Graeco-Romans,' since they were Roman subjects at this time.

mast. In the Indian Ocean only those outriggers of Ceylon have a fixed mast, and it is located at the center of the canoe. The tack of the sail is moved from one end of the boat to the other when sailing on different tacks. In Sumatra, Arabia, and Madagascar there is no fixed mast. The two sprits are loose and set up by means of ropes and lashings. Since the early Mediterranean spritsail had the tack of the sail made fast aft of the mast, the Indonesian spritsail is the more primitive form. We cannot assume that the sail degenerated when introduced to the Indian Ocean and then spread so widely. A more reasonable explanation is that the Graeco-Romans altered the sail slightly when they brought it back to the Mediterranean by making the tack fast aft of the mast. Indeed it is the only logical way to set the sail on a permanent mast in a boat that sails in one direction only. If the tack were made fast to the bow, part of the sail would back against the mast on one tack and the boat could not be pointed as high as on the other tack.

Thus it is difficult to see how the Graeco-Romans could have introduced the sail to the Indian Ocean, but it is easy to understand why they would have brought it back to the Mediterranean when they saw it on local craft.[9] The actual agents for the transmission were probably Greek sailors, since the Indian trade was in the hands of the Greek merchants of Alexandria. This would explain its ancient occurrence in Greece and Asia Minor as well as Ostia, the port of ancient Rome. It is evident that the spritsails seen on the Bosphorus today have been used there for over 1,700 years, although the shape of some of these has changed considerably during this time.

Why the efficient spritsail did not occur in northern Europe until the start of the fifteenth century is a mystery. It might be suggested that the sail was introduced to some part of Holland during Roman times, and that it did not gain widespread acceptance (and was not recorded) until over a thousand years later. But this does not seem plausible considering that Holland is so small. It is more reasonable to suggest that the spritsail was brought back to northern Europe from the Eastern Mediterranean by the Crusaders. We know that the windmill made its appearance in the twelfth century in Europe where it was called *turquois* (Turkish), and it has been assumed by some scholars that it was brought back to the Low

[9] The introduction of the spritsail to the Mediterranean may well have been an instance of 'stimulus diffusion,' wherein a new idea was introduced by a vague hint, rather than the whole patterned structure being taken over. A Greek who had sailed to India could have described the Indonesian spritsail to a friend in the Mediterranean, who came up with the European spritsail when he set it up on a boat. But, on the other hand, it must be remembered that, even if the sail were first set in the manner of the Indian Ocean, it would eventually have been changed to the way found on the European spritsail.

Countries by the Crusaders.[10] Perhaps the introduction of the spritsail to Europe goes back to this time, even though the first representation of the sail does not occur until 1416 (Fig. 2).

From northern Europe the European spritsail (with the tack fastened to the base of the mast) was carried to the Indian Ocean and the Far East by the Dutch and the English after A.D. 1600. Thus the spritsails seen on craft of the Ganges in India and in China today are due to European influence. This is also true of the many examples of the European spritsail seen in the Pacific. In some places in China the Chinese system of multiple sheet parts has been applied to the after edge of the sail (Fig. 1).

It is apparent that the Dutch did not invent the spritsail. Rather we must credit the Asiatics as the true inventors of the spritsail, although it appears that Western sailors are to be credited with perfecting it and introducing it to Europe. An independent invention in the two regions is unthinkable in view of the active commercial contact lasting for many centuries between the two areas around the start of the Christian era.

II

The Dutch have long been credited with the invention of the gaff sail, and apparently that they are entitled to this recognition. R. Morton Nance has pointed out that an illustration of the siege of Stockholm in 1523 shows a square-headed gaff sail.[11] The gaff sail did not become common until the late sixteenth century. The first gaff sails possibly developed from the spritsail as an alternate means of holding the head of the sail up. In their early forms, both sails were perfectly rectangular, and sometimes almost square. There is evidence that this change (sprit to gaff) may have been accidentally brought about.

Many seventeenth-century Dutch paintings show that the peak of the spritsail was lowered by slacking off on the tackle which held the base of

[10] P. K. Hitt, *History of Syria* (New York: Macmillan Company, 1951), p. 619. However, Forbes (R. J. Forbes, *Studies in Ancient Technology* [Leiden: Brill, 1955], II, 111-120; R. J. Forbes, 'Power,' in C. Singer, et al., *A History of Technology* [Oxford: Clarendon Press, 1956], pp. 614-620), suggests that the windmill could also have come to Europe from the Moslem world via Morocco and Spain. But he points out that in principle the Western mill is basically different from the Eastern one, since in the former the wind impinges on the whole of the sail area so that it is a kind of reversed air screw, but in the latter the air acts only on a part of the area, much like the water wheel. Forbes points out that the Western windmill may well have been independently invented. See also R. Wailes, 'A Note on Windmills,' in C. Singer, et al., op. cit., pp. 623-628. J. Needham, *Science and Civilization in China* (Cambridge, 1954), pp. 244-245, has suggested that the introduction of the windmill to the West may be a good example of 'stimulus diffusion.' In this case someone associated with the Crusades could have said to someone else—'Certain Saracens have harnessed the power of the wind to grind their corn.' With this suggestion, some European millwright solved the problem in his own way.

[11] R. M. Nance, 'Spritsails,' *Mariner's Mirror*, 3 (1913), 155-157.

the sprit to the mast, and raising the sprit base by a runner from the masthead. Many illustrations show the sprit right across the mast (Fig. 3).[12] It does not take much imagination to see how the idea of fixing the sprit to the head of the sail occurred, nor why this change was made. There was a natural displeasure at having the big spar up aloft swinging backward and forward across the boat as the latter rolled in a sea. A gaff sail was inherently a safer rig. Such an origin is strengthened by the fact that in some early pictures of the gaff sail, the end of the gaff projects past the mast as it

Fig. 3. A Dutch spritsail with the sprit hoisted so that it was right across the mast. The idea of the gaff sail may have occurred when the sprit was in such a position. (*After Chatterton,* Sailing Ships.)

would with any kind of parrel or lashing to the mast. The jaws of the gaff did not appear until about 1700.[13]

In less than a hundred years after the first record of the gaff sail, both gaff sails and spritsails became high peaked. This is an obvious development for the gaff sail, for it would be very difficult to raise a flat gaff with a large sail without a very high mast. The shape of the gaff sail may have influenced that of the spritsail, although it is difficult to say, since both sails appear with high peaks almost simultaneously.

The Dutch gaff sail may have been responsible for the occurrence of an aboriginal gaff sail in the Bismarck Archipelago, since the Dutch were

12 E. K. Chatterton, *Sailing Ships* (London: Sidgwick & Jackson, Ltd., 1909), Fig. 84, p. 287.
13 E. P. Morris, op. cit., p. 33.

sailing to these islands early in the seventeenth century. In the Bismarck Archipelago the two-masted, Boro Budur rig is common, but it has been altered so that it is a standing lug rather than a balance lug.[14] The Siassi Islanders modified the standing lug design one step further so that all of the area of the sail was behind the mast, thereby producing a gaff sail (Fig. 4).[15] The forward end of the gaff projects past the mast just as the first Dutch gaffs did. These sails were found on single-masted and two-masted canoes. In two-masted canoes the masts were of equal heights and set so that they diverged from each other. The rigging was arranged so that the

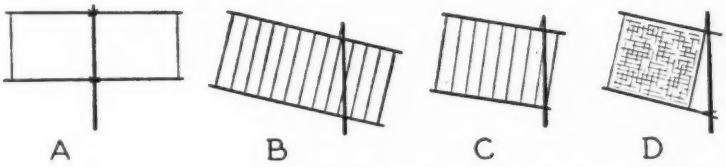


Fig. 4. The evolution of the Bismarck gaff sail. A, Square sail of the proportions of the ancient Egyptian sail, twice as wide as high. B, Boro Budur type of balance lug derived from Egyptian type of sail. C, Standing lug modification of Boro Budur type of sail found in the Bismarck Archipelago. D, Gaff sail of the Siassi Islanders in the Bismarck Archipelago.

canoes, which were single outriggers, could be sailed in either direction (Fig. 5).[16]

The change from the Boro Budur balance lug to the gaff sail in the Bismarck Archipelago is an excellent example of the gradual evolution which takes place in sails and results in more efficient sail forms over a long period of time. The Boro Budur type of balance lug sail spread from central Indonesia[17] to the Bismarck Archipelago.[18] Then there is evidence that the Malayan type of standing lug was introduced to the islands and influenced the Boro Budur type sails. The final development of the gaff sail was probably influenced by Dutch gaff sails. The Dutch could not have borrowed the gaff sail from the Bismarck Archipelago for they were not in the area until about a hundred years after its occurrence in Holland. Thus we have a gradual evolution which changed a square sail of

[14] R. LeB. Bowen, Jr., 'Eastern Sail Affinities,' AMERICAN NEPTUNE, XIII (1953), 205-207.

[15] A. C. Haddon, *Canoes of Melanesia, Queensland, and New Guinea* (Hawaii: B. P. Bishop Museum, 1937), pp. 156-160.

[16] Ibid., Fig. 96, p. 158.

[17] In this article 'Indonesia' is used in its strict sense to include only the Malay Archipelago.

[18] R. LeB. Bowen, Jr., op. cit., pp. 104-105.

the wide Egyptian type with a boom to a true gaff sail (Fig. 4). All of the changes which led to the final fore-and-aft sail were gradual and not very significant in themselves, and most could have been discovered by observing the effects of slight shifts in the rigging of the previous sail.

It is interesting to note that the Dutch gaff sail was developed in a similar manner, by gradual steps. The first step was the Indonesian spritsail (Fig. 6). This was modified to the European spritsail when the sail was

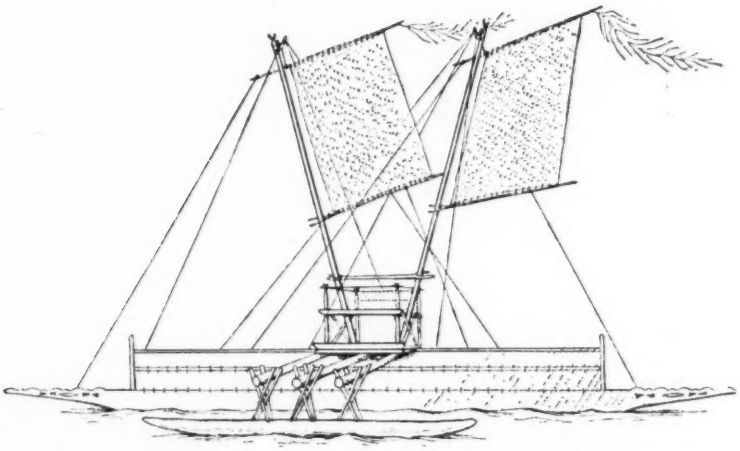


Fig. 5. Two-masted, sailing, outrigger canoe of the Siassi Islands. The canoe is sailed in different directions on different tacks, always keeping the outrigger to windward. The gaff sails simply swing around the masts. (*After Haddon,* Canoes of Melanesia, Queensland, and New Guinea.)

brought back from the Indian Ocean. Then the Dutch moved the foot of the sprit from the base of the mast to the throat of the sail. Later the peak of the sail was raised and a boom was added to the foot of the sail (Fig. 6). Neither the European gaff sail nor the European spritsail was 'invented' as an entirely new sail. Both evolved from the more primitive Indonesian spritsail by gradual changes in the rig—changes which in themselves were relatively slight. All the changes made in such perfections could have been discovered accidentally.

The booms of most of the standing lugs of the Bismarck Archipelago have forks at their forward ends. The mast rests between the jaws of the fork. Sometimes the boom has a natural fork at its end. Other times a

tree fork is lashed to the forward end of the boom. It was mentioned above that the jaws of the gaff of the Dutch gaff sail did not appear until after 1700. The Dutch discovered the Admiralty Islands in the Bismarck Archipelago in 1616. They may have possibly derived the idea of jaws for their gaffs from the forked booms of these islands, although such a small detail could certainly have been invented independently. From the wide distribution of the forked boom in the Bismarck Archipelago, it does not seem that it could have been introduced to these islands in historic times by Europeans.

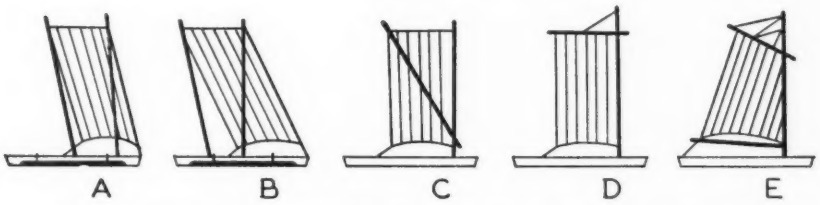


Fig. 6. The evolution of the Dutch gaff sail from the Indonesian spritsail. A, Typical form of Indonesian spritsail with both sprits moveable. B, Specialized form of Indonesian spritsail found at Ceylon, where one of the sprits is fixed in the center of the canoe. C, European spritsail. D, Early type of Dutch gaff sail with square head. E, Peaked Dutch gaff sail with loose-footed sail spread by boom.

A boom did not occur at the foot of European sails until the seventeenth century. It first occurs on Dutch craft, but consists of a sprit to extend the clew of the otherwise loose-footed sail. In England and America the foot of the sail often became laced to the boom, but the Dutch to this day use a sprit to extend the clew of a loose-footed sail. Possibly the Dutch borrowed the idea of a boom from the East where practically every sail had a boom. It also seems that the idea of lacing the foot of the sail to the boom could have likewise come from the East.

III

The Dutch have often been credited with the invention of another fore-and-aft sail: the leg-of-mutton sail.[19] Originally the leg-of-mutton sails which were first seen on Dutch craft and which later spread to Bermuda and America were jib-headed triangular sails set abaft the mast without a boom. The mast invariably had a marked sternward rake. The so-called

[19] This sail is called a 'Bermudian' or a 'shoulder-of-mutton' sail by the English.

'Marconi rigged' lofty triangular sail and other variations of the triangular sail, which will be discussed later, have evolved from the original leg-of-mutton form.

The earliest representation of the Dutch leg-of-mutton sail is in a painting of the 'Royal Prince at Flushing' by Hendrick Vroom in the Franz Hals Museum, Haarlem. Vroom was born in 1566 and died in 1640. This painting has been dated in the year 1623, although the event depicted took place in 1613.[20] The sail of Vroom's craft looks like a lateen in which the mast had been done away with and the heel of the yard had been stepped in the boat. This type of sail is corroborated by another Dutch

Fig. 7. Early leg-of-mutton and short-gaff sails. A, Spilbergen's illustration of the Peruvian, two-masted, leg-of-mutton rig on a sailing raft published in 1619. (*After Spilbergen,* Miroir Oost & West-Indical.) B, Dutch, two-masted, leg-of-mutton rig of about 1629. (*After Chatterton,* Fore and Aft.) C, Dutch, two-masted, short-gaff rig of about 1642. (*After Chatterton,* Fore and Aft.)

painting of 1629 which shows a two-masted vessel with two of these sails (Fig. 7).[21] Still a later Dutch illustration of 1780 shows a similar two-master, although the masts appear to be more vertical.[22]

All these illustrations have several things in common. In the first place, there is no standing rigging on the masts, which rake strongly aft. Further, there does not appear to be any halyard and there is no boom at the foot of the sail. It might seem that the sail was actually a lateen sail laced to a 'yard' which was stepped in the boat without a 'secondary' mast. Presumably the sail was furled at the mast in brails when not used. Otherwise the

[20] C. Singer, et al., *A History of Technology* (Oxford: Clarendon Press, 1957), Vol. III, pl. XXII. This painting is also illustrated in G. S. L. Clowes, *Sailing Ships* (London: Ministry of Education, 1948), Part I, Plate XIII.

[21] E. K. Chatterton, *Fore and Aft* (London: Seeley, Service & Co., 1912), p. 76.

[22] E. P. Morris, op. cit., Plate XXB, p. 118.

mast would have to be unstepped each time the sail was taken down.

At this point it will be necessary to return to the Indonesian spritsail again to trace the story of the leg-of-mutton sail. I have previously shown that by a process of gradual evolution the proto-Oceanic spritsail (what we are calling the 'Indonesian spritsail' in this present article) gave rise to the Oceanic spritsail.[23] First the sail was made fast to two vertical sprits, one of which served as the mast. The after sprit was fastened to the leech of a rectangular sail (Fig. 8). Then the two sprits were converged so that a triangular (or sub-triangular) sail was obtained. In some places in Polynesia the forward sprit (mast) was raked aft (Fig. 8). This form of sail

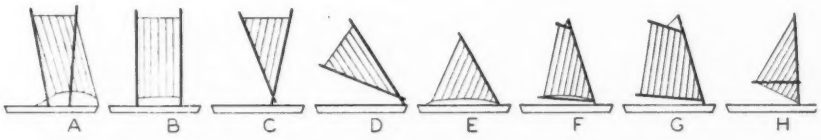


Fig. 8. The evolution of leg-of-mutton and short-gaff sails. A, Indonesian spritsail. B, Melanesian spritsail. C, Oceanic spritsail. D, Oceanic spritsail with center of effort lowered by tilting the mast aft. E, Peruvian spritsail= Dutch leg-of-mutton sail. F, Dutch short-gaff sail. G, Dutch gaff sail. H, American 'sharpie' sail.

spread completely across the Pacific to the Peruvian coast of South America. From there it spread overland, possibly down some river, to the Brazilian coast (Fig. 33).

The earliest known representation of the Peruvian triangular sail was published in 1619 by Joris van Spilbergen, who made a trip around the world in the years 1614 to 1617 (Fig. 7).[24] Spilbergen showed these sails on a two-masted sailing raft of Peru, and referred only to 'sails very wonderfully made.' I have previously questioned the accuracy of Spilbergen's representation of these sails, pointing out that the artist may have left the boom off these sails.[25] This might indeed seem to be substantiated by the fact that the same artist definitely made similar errors in other Oceanic sails, and by the fact that the early triangular sails of the Brazilian sailing rafts did have booms. However, there is certainly no reason why the Peruvians could not have abandoned the boom. It is interesting to note that Spilbergen's artist drew the Peruvian leg-of-mutton sails like 'lateen

[23] R. LeB. Bowen, Jr., op. cit., pp. 84-101.

[24] G. de Spilbergen, *Miroir Oost & West-Indical* (Amsterdam: Ian Iansz, 1621), Plate 13, facing p. 60. There is an earlier edition published in Leiden in 1619 which contains the same illustrations as the 1621 edition.

[25] R. LeB. Bowen, Jr., op. cit., pp. 90-91.

sails without masts,' for he shows the mast composed of two spars lashed together in the middle. No Pacific masts were ever constructed in this manner, but of course practically every Western lateen yard was.

Thor Heyerdahl questioned the reliability of these sails too: 'Until we have more corroborative evidence, the triangular sails on Spilbergen's balsa raft seem to stand alone, and may possibly represent a late acquisition, or a lapse of memory if the artist made his drawing upon return to Europe.'[26] It is important to note that Heyerdahl is not questioning the details of the drawing, but rather he is doubting the existence of such sails. Presumably this is because he feels that only square sails should be found on the Peruvian rafts. Heyerdahl himself presents in this same work the corroborative evidence in the words of the Spanish explorer Oviedo y Valdes who wrote about his travels during the years 1535-1548 and referred to the *velas latinas* of the Peruvian rafts. He translates this as 'latin sails' rather than 'lateen sails.' Of course the Spanish were familiar with the triangular lateen sail, and on first sight these triangular sails looked like lateen sails. Professor George F. Carter has pointed out to me that somewhere in the literature is a record that the Incas told the Spanish that in previous times people with triangular sails had come from the Pacific to trade with them.

The idea of setting a mast without standing rigging was novel in Europe, as was the idea of permanently lacing the luff of the sail to the mast. It does not seem that we can suggest that the Dutch independently modified the Mediterranean lateen to this extent, by discarding the mast and rigging and stepping the heel of the yard in the boat. Rather it seems that the Dutch must have borrowed the idea from the Peruvians. The most obvious means by which this may have been accomplished was via the Spanish. They were well established in Peru during the sixteenth century, and there were also close bonds between Spain and Holland during this period. Knowledge of the sail could have come from the Spanish, even though the sail form was never used in Spain. This may have happened either by a description in a printed medium, or by some Spaniard remarking to a Dutchman that—'The Peruvians sail their rafts with lateen sails without masts.' The Dutch took it from there. This is an excellent example of 'stimulus diffusion,' wherein a faint suggestion of an idea could lead to roughly the same result in areas often widely separated by either space or time.[27]

On the other hand, the introduction of the leg-of-mutton sail may well

[26] T. Heyerdahl, *American Indians in the Pacific* (New York: Rand McNally & Company, 1953), pp. 526, 530.

[27] J. Needham, op. cit., p. 244. Also notes 9 and 10 above.

be traced directly to Spilbergen. We have mention that the first illustration of a European leg-of-mutton sail is in Vroom's 'Royal Prince' painting, which is dated to the year 1623. Spilbergen did not return until 1617. We could assume that his reports of the 'wonderfully made' sails used on the Peruvian rafts were responsible for the first Dutch leg-of-mutton sails. Evidence that this may well be the case is shown by the fact that Spilbergen's illustration of the Peruvian leg-of-mutton sails shows them as 'lateen sails without masts.' We have indicated that this was probably incorrect on two accounts: (1) Pacific sails never had the masts made of two pieces lashed together in the middle, and (2) these Pacific sails probably had booms. However, the dates just seem too close, and an indirect diffusion through the Spanish seems the more reasonable explanation for the single-masted, Dutch, leg-of-mutton rig.

At any rate, the idea must have come to Holland from the East. We simply cannot admit that a related sail form existed in the Pacific, *that Europeans knew of it*, and then suggest that it was independently invented in Holland. Some scholars have suggested that the leg-of-mutton sail was actually evolved from the lateen by discarding the mast and stepping the lateen yard.[28] Modern evidence can be produced to show that in recent times some lateen sails have indeed been converted by discarding the mast and stepping a yard made thicker at the tack. However, all these instances have taken place with full knowledge of triangular leg-of-mutton sails. The fact that such changes have taken place *after* the widespread distribution of the leg-of-mutton sail proves absolutely nothing about how or why the *first* European leg-of-mutton was developed. Even if the first leg-of-mutton sails did occur on Dutch boats which formerly carried lateens, can we say that they did so independently if the Dutch had knowledge of similar sails from the Pacific? The answer should obviously be no.

While there is a question about whether the Dutch or the Spanish are responsible for the first appearance of the single-masted, leg-of-mutton rig in Holland, there does not seem to be much doubt about the two-masted rig. The first published European illustration of this rig is Spilbergen's Peruvian raft. Less than ten years after Spilbergen's published account, the Dutch were using the two-masted, leg-of-mutton rig. From Holland the two-masted rig spread to England, Bermuda, and America. It must be remembered that in all cases this rig displaced some existing type of rig. In some cases it may well have been a two-masted lateen rig. In these cases it would indeed be difficult to determine whether the two-masted, leg-of-

[28] Sir Alan Moore, 'Rig in Northern Europe,' *Mariner's Mirror*, 42 (1956), 19; L. G. C. Laughton, 'The Bermuda Rig,' *Mariner's Mirror*, 42 (1956), 333-335.

mutton rig had been copied, or whether the two lateen sails had been converted to leg-of-mutton sails under the influence of the single-masted, leg-of-mutton rig. But the former hypothesis seems more reasonable in view

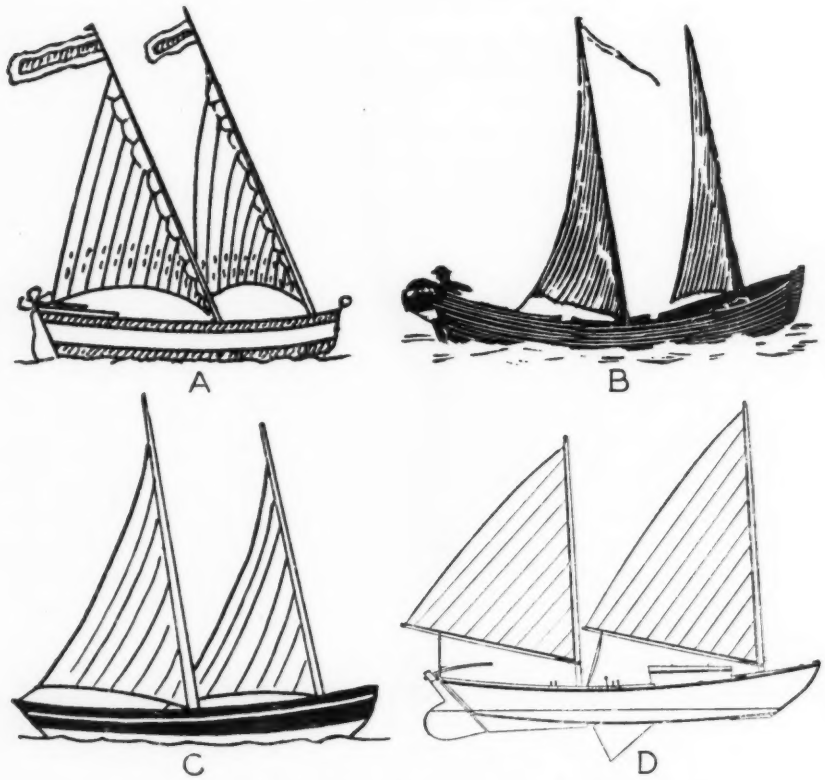


Fig. 9. Early, two-masted, leg-of-mutton rigs. A, Bermuda about 1671. (*After Morris,* The Fore-and-Aft Rig in America.) B, England about 1794. (*After Steel,* Elements and Practice of Rigging.) C, Duxbury, Massachusetts, about 1800. (*After Morison,* Maritime History of Massachusetts.) D, New England about 1890. (*After Chapelle,* American Small Sailing Craft.)

of the fact that, with the exception of the single-masted example shown in Vroom's painting, all of the early leg-of-mutton sails appear on two-masted boats.

The rig spread to Bermuda at an early date, for a similar two-masted,

leg-of-mutton rig is shown in a work on Bermuda published in 1671 (Fig. 9).[29] Morris says that the Dutch were responsible for introducing the rig to Bermuda and suggests that this is supported by the type of evidence that one would like to get more often in nautical history.[30] It appears that a Dutch carpenter was shipwrecked on Bermuda and employed by the governor to build boats sometime between the years 1619-1621. Later complaints against the governor mention a Dutch carpenter who was making boats. The years of 1619-1621 seem to be too close to Spilbergen's return for this Dutch carpenter to have been familiar with the two-masted, leg-of-mutton rig, although he could have been. It is more probable that it was introduced to Bermuda from England. The two-masted rig does not seem to have been popular in England if we can go by the pictorial records, although it lasted there until at least the start of the nineteenth century. Steel shows an illustration of an English, two-masted, leg-of-mutton-rigged pinnace (Fig. 9).[31] The two-masted, lef-of-mutton rig also lasted in Holland until at least the same time, for Morris shows a Dutch boat of 1780 rigged in this manner.[32] Today in England the leg-of-mutton sail is known as the 'Bermuda,' the 'Bermudian,' or the 'Mugian' sail. On the surface, this might indicate that the sail was introduced to England from Bermuda.

The triangular leg-of-mutton sail of Bermuda was known as the 'Bermuda sail' by early English visitors to the island, for Fortrey, writing about 1675, refers to the 'Bermoothes sail.'[33] However, before 1800 a similar triangular sail used in England was referred to by Steel as a 'shoulder-of-mutton' sail, and he does not mention a 'Bermuda' sail.[34] Folkard says that the 'Bermudian rig' was introduced to England shortly after 1850 by Triscott,[35] who was admiral-superintendent at Bermuda from 1832 to 1835. The rig was used primarily on racing craft. We can only assume that the sail was early known in England as the Bermuda sail as well as a shoulder-of-mutton sail.

29 E. P. Morris, op. cit., p. 117.

30 Ibid., p. 119.

31 D. Steel, *The Elements and Practice of Rigging: Seamanship and Naval Tactics* (London, 1800), Vol. III, Plate 2 (Plate 10 of text). The first edition was published in 1794.

32 E. P. Morris, op. cit., Plate XXB.

33 L. G. C. Laughton, op. cit., pp. 333-335.

34 D. Steel, op. cit., Vol. II, p. 126, shows an illustration of a perfectly triangular sail which he calls a 'shoulder-of-mutton sail.'

35 H. C. Folkard, *The Sailing Boat*, 6th ed. (London: Chapman and Hall, 1906), p. 395. However, the term Bermuda sail was certainly used in England before 1850, for T. R. Blanckley, *Naval Expositor* (1750) says that 'Sloops are sailed and masted as mens fancies lead them, sometimes with one mast, with two, and with three, with Bermudoes, shoulder of mutton, square, lugg, and smack sails.' (Quoted by A. Moore, 'Sloop—Jackass-Schooner,' *Mariner's Mirror*, XIV [1928], 181.) The difference between a Bermuda sail and a shoulder-of-mutton sail in England at this time is not evident.

In early America the two-masted, leg-of-mutton rig (without jib) is usually found on small boats. In all pictures where they are shown with other boats, they are always among the smallest craft in the scene. One is shown at the extreme left of the 1717 view of New York with the triangular foresail set but no sail on the main.[36] Three small two-masted, leg-of-mutton rigs are shown in a 1753 view of Philadelphia.[37] One is shown in a 1762 map of Philadelphia along with a variety of other boats.[38] In an early painting of Chesapeake Bay, which is probably pre-Revolutionary, the smallest boat with sails has two leg-of-mutton sails.[39] Two similar small

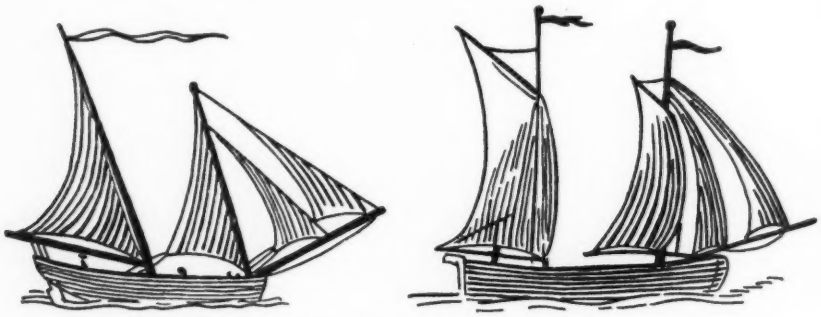


Fig. 10. Left, two-masted, leg-of-mutton rig with jibs from a chart of Delaware Bay printed in 1756. Right, two-masted, gaff-rigged boat shown on the 1776 London edition of the chart of Delaware Bay.

boats with two leg-of-mutton sails are also shown in a painting of the water front of Duxbury, Massachusetts, about 1800 (Fig. 9).[40] At an early date in America one or two jibs were added to the two-masted, leg-of-mutton rig in larger boats. The 1756 chart of the Delaware Bay shows a two-masted, leg-of-mutton rig with two jibs and is the earliest example I know of for the use of jibs with this rig in America (Fig. 10).[41] The 1762 map of Philadelphia also shows this two-masted rig with two jibs.

Morris felt that the two-masted, leg-of-mutton rig in America had

[36] E. P. Morris, op. cit., Plate II.

[37] D. B. Tyler, *The Bay and River Delaware* (Cambridge: Cornell Maritime Press, 1955), p. 18.

[38] Ibid., p. 39.

[39] M. V. Brewington, *Chesapeake Bay* (Cambridge: Cornell Maritime Press, 1953), p. 15.

[40] S. E. Morison, *The Maritime History of Massachusetts* (Boston: Houghton Mifflin Company, 1941), plate facing p. 144.

[41] A copy of this chart is reproduced by L. C. Wroth, *Some American Contributions to the Art of Navigation, 1519-1802* (Providence: Associates of the John Carter Brown Library, 1947), plate facing p. 22. Original copies of this chart are in the John Carter Brown Library (Providence) and the Maryland Historical Society.

either a Dutch or a Bermudian origin.[42] But Howard Chapelle does not think that the New Netherlands colony of the Dutch could have had any effect on the rigs of America, and feels that all early American rigs were derived from the English.[43] Actually it does not seem that we have enough evidence to say with certainty who introduced the two-masted, leg-of-mutton rig to America. However, certain facts are evident. The whole country along the Delaware was disputed by the Swedes, the Dutch, and the English before its settlement. The Swedes settled the area first after building a fort near Chester in 1643, but in 1655 the Swedish settlements passed under the control of the Dutch. Then in 1664 the Dutch in turn lost control to the English who took over their colonies after the fall of New Amsterdam.

The fact that our earliest illustrations of the leg-of-mutton come from New York and the Delaware River and Bay is certainly a strong indication that the Dutch may have introduced the rig before 1664. We have seen above that this rig was used in Holland as early as 1629. Additional evidence is shown by the fact that many of the early American rigs have a smaller foresail just as did the Dutch prototype (Figs. 9 and 10). On the other hand we cannot say definitely that the English did not introduce the rig to the Delaware after 1664.

It is known that the Quakers carried out an extensive trade with the other colonies and the West Indies. Perhaps the leg-of-mutton was introduced to the West Indies and Bermuda at this time from America. Or the English could be responsible for the occurrence of the rig in all these areas. At any rate, one fact is evident: the rig came to the English from the Dutch. Whether the Dutch introduced the rig to America is not evident. Personally I favor the latter hypothesis in view of the fact that residual Dutch influence is shown in the 1753 view of Philadelphia by a bluff-bowed boat of obvious Dutch design complete with leeboards and a single leg-of-mutton sail, placed right in the center foreground of the illustration.[44]

The problem of the origin of the two-masted, leg-of-mutton rig in America is confused by several pieces of evidence. In the first place, a painting showing a view of Philadelphia and dated 1720 does not show any leg-of-mutton sails, but instead shows two-masted, gaff-rigged craft.[45] The 1756 chart of the Delaware Bay shows a two-masted, leg-of-mutton-

[42] E. P. Morris, op. cit., pp. 120-124.

[43] H. I. Chapelle, *American Small Sailing Craft* (New York: W. W. Norton & Company, 1951), pp. 14-16.

[44] D. B. Tyler, op. cit., p. 18.

[45] Ibid., pp. 16-17.

rigged boat with jibs (Fig. 10). However, in a 1776 London edition of this chart, the leg-of-mutton sails have been changed to gaff sails (Fig. 10).[46] Now this could mean several things. The English engraver could have substituted a rig with which he was more familiar, and it might imply that the English did not have the two-masted, leg-of-mutton rig at this time. On the other hand, the engraver might have been led to believe that the gaff rig was more typical for these two-masted craft in America.

The problem is further confused by at least one other American edition of the Delaware chart which is not dated. This particular chart shows

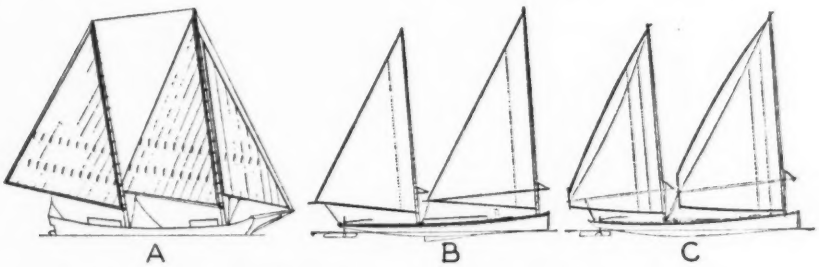


Fig. 11. Modern leg-of-mutton rigs and modifications. A, 'Bugeye' of Chesapeake Bay. B, 'Sharpie' of Long Island Sound. C, 'Sharpie' of Chesapeake Bay and North Carolina. (*After Chapelle,* American Small Sailing Craft.)

gaff-rigged sails. It could have been made before the English edition of 1776 and served as a model for the latter, or it could have been made from the English edition. From a practical point of view, it seems that it must have been made before 1776, and thus the leg-of-mutton sails were changed to gaff sails by an American. It may indicate that this type of sail had become more popular by this time. This does not serve as a basis for the introduction of the two-masted gaff rig, for the 1720 painted view of Philadelphia shows this rig. It does not seem that the date of the painting could be that far off.

The two-masted, leg-of-mutton rig existed in Chesapeake Bay into the twentieth century on the 'bugeye' (Fig. 11). In fact these sailing craft are still used today in the oyster industry, since power craft are outlawed. The bugeye is strictly a local type found on Chesapeake Bay. It carries two leg-of-mutton sails and a broad jib. Morris states that the early rig probably did not have a jib, although he does not give any authority for this statement. An early representation of the bugeye (or the sail plan of the

[46] A copy of this 1776 London chart (J. Fisher, *A Chart of Delaware Bay and River*) may be found in *The North American Pilot,* No. 26.

bugeye) is shown in an 1844 view of Chesapeake Bay.[47] In the examples which existed into recent times, the after mast is usually just a little shorter than the forward mast, although sometimes the masts are the same height. On smaller boats there are no shouds. A boom has been added to the original form of the sail, but otherwise the shape of the sail and the rake of the masts has been remarkably preserved during the three hundred years since the Dutch first copied the sail from the Peruvians. Marion Brewington has published dozens of excellent photographs of these craft under sail.[48] A similar two-masted, leg-of-mutton rig with booms, but without jib, existed in New England on dories in the 1890's (Fig. 9).[49]

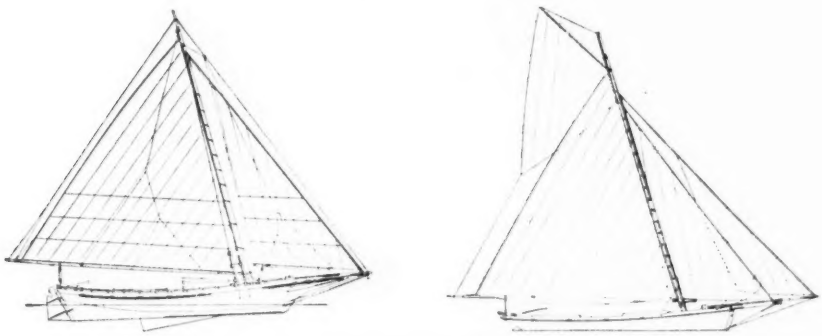


Fig. 12. Single-masted, leg-of-mutton rigs. Left, 'Skipjack' of Chesapeake Bay. Right, sloop of Bermuda. (*After Chapelle,* American Sailing Craft.)

A single-masted variety of the leg-of-mutton rig is also found in Chesapeake Bay on the 'skipjack' (Fig. 12). This sloop-rigged boat has the same rake of mast as the two-masted bugeye and there is a boom at the foot of the sail. The sail is about the same shape, but the jib is not usually as broad as on the bugeye. Similar sail plans were carried on the single-masted sloops and dinghies of Bermuda (Fig. 12). It is evident that the single-masted, leg-of-mutton rig is a 'degeneration' or simplification of the two-masted rig. The rake of the masts of both the one- and two-masted, leg-of-mutton rigs has puzzled all who have studied the rigs. Morris said that 'The characteristic of the bugeye and the Bermuda boat that first attracts notice is the extreme rake of the masts. To a less degree masts have raked on many rigs at different times, and, so far as I know, no

47 D. B. Tyler, op. cit., p. 67.

48 M. V. Brewington, op. cit. Cf. also M. V. Brewington, *Chesapeake Bay Bugeyes* (Newport News: Mariners' Museum, 1941).

49 H. I. Chapelle, op. cit., p. 93.

single explanation has been given that covers all cases.'[50] In regard to the skipjack, Chapelle once commented: 'The reason for the extreme rake of the mast is hard to discover. Probably it is a matter of custom.'[51] There now seems little doubt that the extreme mast rake found with many of these leg-of-mutton sails is indeed a matter of custom and preserves the original form of the Peruvian sails which inspired the first Dutch two-masted, leg-of-mutton rig.

The two-masted, leg-of-mutton rig was preserved on another American local type, the 'sharpie,' which was a common type of craft in Long Island Sound (Fig. 11). There is little doubt that this type came to the Sound with the oyster industry in 1823 when the first oysters were transplanted from Chesapeake Bay.[52] The Long Island Sound sharpie had more or less vertical masts with triangular leg-of-mutton sails. The masts were made vertical when introduced to Long Island Sound. The sails were loose footed, but a spar was used to extend the clew of the sail. This spar met the mast at some distance above the foot of the sail. Similar two-masted boats (but with raked masts) were known in Chesapeake Bay, although they were not called sharpies.[53] The boats known as sharpies in Chesapeake Bay and North Carolina had a short vertical spar added to the after edge of the horizontal spar (Fig. 11).[54]

The sharpie was generally rigged without any stays or shrouds. Chapelle points out that the lack of standing rigging on the sharpie and many other leg-of-mutton rigs stands out in contrast to modern usage.[55] He presents many of the reasons which the users of the rigs give for not using any standing rigging, some of which make sense, some of which do not. It is apparent that this is just a matter of tradition, like the rake of the masts. The rigs are direct descendants of the Peruvian leg-of-mutton rig which never had any standing rigging either. The sails of some of the Brazilian *jangadas* have been altered in recent times so that the original boom which was laced to the foot of the sail is now arranged like the sprit of the sharpie, possibly under American influence.[56]

A two-masted, leg-of-mutton rig is also found in the very Eastern Medi-

[50] E. P. Morris, op. cit., p. 122. L. G. C. Laughton, 'Rake of Masts,' *Mariner's Mirror*, XIV (1938), 173, discusses Morris' comments and concludes that 'the one purpose, and possibly the chief purpose, of the raking mast was to keep the long boom out of the water when the vessel rolled before the wind.'

[51] H. I. Chapelle, *American Sailing Craft* (New York: Kennedy Brothers, 1936), p. 25.

[52] E. P. Morris, op. cit., p. 114.

[53] M. V. Brewington, *Chesapeake Bay* (Cambridge: Cornell Maritime Press, 1953), pp. 68, 69, 109.

[54] Ibid., p. 109; H. I. Chapelle, *American Small Sailing Craft* (New York: W. W. Norton & Company, 1951), p. 123.

[55] H. I. Chapelle, *American Small Sailing Craft* (New York: W. W. Norton & Company, 1951), p. 230.

[56] R. LeB. Bowen, Jr., 'Eastern Sail Affinities,' AMERICAN NEPTUNE, XIII (1953), 90-91.

terranean on certain Syrian and Lebanese schooners. There are two pole masts almost the same height with a pronounced stern rake. The main-boom for half its length juts over the stern, and the loose-footed foresail is sheeted abaft the mast. There are usually three or four head sails. The luffs of the main and foresails travel on tracks on the masts. From their description these schooners must be very similar to the bugeye of Chesapeake Bay. Greenhill points out that no illustration of the Eastern Mediterranean of the eighteenth or nineteenth centuries shows such a vessel, or even a sail of the Bermudian type.[57] He concludes that it is therefore a foreign introduction in later times. How it turned up in Syria is simply another unsolved mystery in the spread of sail rigs. A single American schooner sold to a Syrian could have provided the model.

Today the most common form of triangular fore-and-aft sail is found in the Marconi rig. The main characteristic of the Marconi rig is a triangular sail which is unusually lofty. The mast is usually vertical, or almost so, and there is a boom at the foot of the sail. The term is applied to a rig, rather than to a sail, and there is always a triangular jib. Some writers have suggested that the Marconi rig was produced from the so-called 'gunter-lug' when the almost vertical gaff was made part of the mast. The Marconi rig did not appear until the 1920's, when it was first used on racing boats. Thus it was obviously a product of the drawing board, and its shape may well have been taken from that of the gunter-lug. But there can be little doubt that it owes its ancestry to the leg-of-mutton and not the gaff sail.

IV

We have already shown that the Dutch invented the gaff sail sometime before 1523, the date when it is first illustrated. There is a variation of the gaff sail which deserves separate treatment: this is the short-gaff sail (also called the shoulder-of-mutton sail by some English writers). The first example we have of the short-gaff sail occurs on a two-masted Dutch craft dated 1642 (Fig. 7).[58] This first short-gaff sail is a modification and improvement of the original, two-masted, leg-of-mutton rig. The leg-of-mutton was popular from the start, but some apparently felt the need for some means of raising and lowering the sail. To satisfy this desire they introduced a short-gaff at the head of the sail with a single halyard leading to

[57] B. Greenhill, 'Notes on the Syrian Schooners,' *Mariner's Mirror*, 40 (1954), 314-315.

[58] E. K. Chatterton, *Fore and Aft* (London: Seeley, Service & Co., 1912), Fig. 13, p. 78. The late L. G. Carr Laughton, 'The Bermuda Rig,' *Mariner's Mirror*, 42 (1956), 333-335, says that the single-masted, shoulder-of-mutton rig [= short-gaff rig] was first heard of in England in 1545. He gives no reference for this. I take this date to be a typographical error. This is the only reference to such an early English usage and must be rejected lacking the actual evidence. See R. LeB. Bowen, Jr., 'The Bermuda Rig,' *Mariner's Mirror*, 43 (1957), 241.

the middle of the gaff. This first short-gaff rig preserved the rake of the leg-of-mutton masts, and more important it lacked any standing rigging. Both halyards lead forward of the masts and in a way serve as forestays.

Most writers have agreed that the short-gaff sail probably originated when a small gaff was added to the head of the sails of the two-masted, leg-of-mutton rig. Morris has disagreed with this on the grounds that 'the ordinary course of things is . . . from one-masted to two-masted rigs.'[59] He suggests that the two-masted, short-gaff rig occurred when two square sails were replaced 'at once' by short-gaff sails which had been developed on a one-masted rig.[60] Of course what Morris failed to realize is that the leg-of-mutton rig in general appeared in Europe as a two-masted rig without the formality of having been perfected as a single-masted rig (excluding the single example of the sail in Vroom's painting, which seems to have been the exception).

The affinities of the first two-masted, short-gaff rig with the two-masted, leg-of-mutton rig are too many to leave any doubt as to the connection between the two. In general the ancestry of the short-gaff sail from the leg-of-mutton sail explains why it usually had its mast raked aft (Fig. 8). Many rigs gradually broke away from the traditional rake of the mast, but an astounding number retained the rake right up to the last. The descent of the long-gaff from the spritsail is similarly shown by the fact that it was usually placed on vertical masts (Fig. 6). In time some of these masts became raked aft slightly in imitation of the short-gaff masts.

Another indication that originally this short-gaff was simply a means to raise the triangular sail is shown by the fact that the Dutch were very fond of these small spars and used them on triangular topsails and jibs.[61] These undoubtedly gave rise to the modern headboards used on some modern sails. Even today a small block or club is sometimes used at the head of the mainsail and jib in the Bermuda rig.[62] In the Bahamas a wide headboard is still used on many of the leg-of-mutton sails. With time the first short-gaff became somewhat longer, until on the average it was about half the length of the foot of the sail. In Holland the short-gaff became curved and is still to be seen to this day on single-masted craft. A Dutch model of 1784 shows that this sail developed to its final stage in Holland on a one-masted boat.[63] The standing rigging is at a minimum in this model with a single shroud at each side of the mast and two forward stays, on one of which is

[59] E. P. Morris, op. cit., p. 35.
[60] Ibid., p. 137.
[61] E. K. Chatterton, op. cit., pp. 57, 118.
[62] E. P. Morris, op. cit., p. 70.
[63] E. K. Chatterton, op. cit., Fig. 28.

set the forestaysail with a very diminutive head spar. The mainsail of this model, as well as those of modern Dutch boats, is laced to the mast with loose rope. The Dutch never did use the hoops that the Americans and British used to keep their sails to the mast.

The long-gaff sail was developed from the spritsail because of the desire to do away with the sprit. The gaff of the short-gaff sail was usually kept short because it was less trouble in a sea. Many writers have assumed that the two-masted, short-gaff rig was spread to America directly by the Dutch.[64]

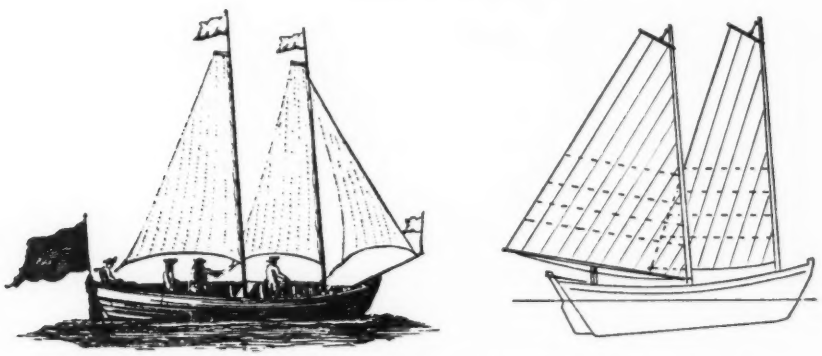


Fig. 13. Two-masted, short-gaff rigs. Left, England about 1708. Right, 'Cowhorn' of Block Island (Rhode Island) of about 1890. (*After Morris,* The Fore-and-Aft Rig in America.)

However, the rig could certainly have been introduced by the English, too, for such a rig was used by the English at least as early as 1708, although this particular English example had a jib and thus is schooner-rigged (Fig. 13).[65] It should be noted that the foremast was slightly shorter, and the foot of the foresail was narrower than that of the main. Chapelle has published a plan of a similar English boat (without jib) taken from English material of about 1760.[66] He suggests that this was the eighteenth-century 'shallop' in America. The earliest American two-masted, short-gaff-rigged craft are apparently shown in a 1720 view of Philadelphia.[67]

There is a very interesting English relief of a two-masted, short-gaff-rigged boat, which is very similar to many of the contemporary Dutch

[64] E. K. Chatterton, op. cit., p. 201; E. P. Morris, op. cit., p. 127.

[65] E. P. Morris, op. cit., p. 176, Plate XXX.

[66] H. I. Chapelle, *American Small Sailing Craft* (New York: W. W. Norton & Company, 1951), p. 21.

[67] D. B. Tyler, op. cit., pp. 16-17.

'speel-jachts,' especially some of those drawn by Savry (Fig. 14).[68] The English example has the date 1678 cut in the tablet over the foremast. In comparing it with a Savry drawing we can note the following similarities: (1) shape of the hull; (2) shape of the stemhead; (3) wrapping around the stemhead (painter); (4) leeboards with griffons; (5) sails set wing-on-wing with main towards viewer and fore away, but on different tacks; (6) a flag on both mainmasts, with a pennant and a flag on the foremasts (Fig. 14).

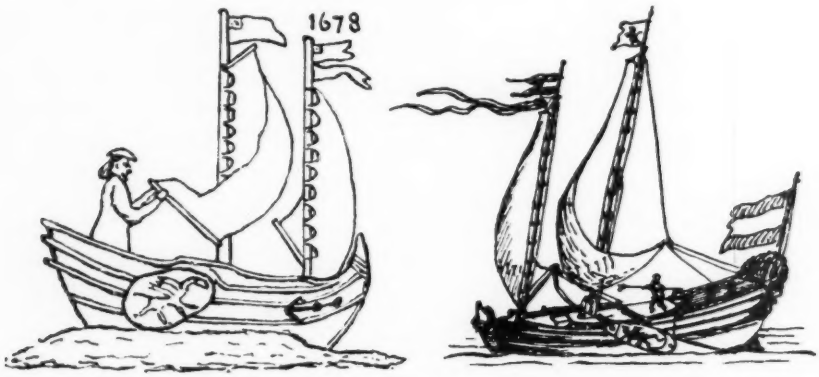


Fig. 14. Early, two-masted, short-gaff rigs. Left, English relief of 1678. *(After Brindley.)* Right, Dutch 'speel-jacht' of about 1650. *(After Verwey.)*

We can hardly escape the conclusion that this English two-masted, short-gaff-rigged vessel is actually a representation of a Dutch boat, which was probably common in English waters at that time. In fact it might even be suggested that the English sculptor copied one of Savry's drawings. The English example differs from the Dutch type only in the lack of rake in the masts and the booms on both sails.

The most archaic form of short-gaff sail preserved in America was to be seen on the Block Island (Rhode Island) 'cowhorn' which was used as late as the 1890's (Fig. 13). The sail form is almost identical to that of the 1708 English boat, but the masts are of equal heights. A somewhat similar rig was preserved on the Isles of Shoals (New Hampshire) boat. The forward sail was a little higher and narrower, just as in the Block Island cow-

[68] H. H. Brindley, 'Ship Tablets at Leith and Newhaven,' *Mariner's Mirror*, XIV (1928), 75-76, published the English example. D. Verwey, 'The Porter's Association Tablet, Leith,' *Mariner's Mirror*, XIV (1928), 179-180, pointed out the similarity with one of Savry's drawings, which has been used as an illustration here. A similar Savry drawing is also published by E. P. Morris, op. cit., Plate XXIV.

horn, but the gaffs were longer than those of the typical short-gaff sails.[69] Most of the American rigs had a boom on the after sail only. In the Block Island boat the mainsail was loose footed and fastened to the boom at the clew only. In other American boats the boom generally became laced to the foot of the sail.

A boom on a loose-footed after sail was characteristic of Dutch rigs. While the 1708 English rig did not show this feature (Fig. 13), it is reasonable to suppose that it was introduced to America later. Both the English and American two-masted, short-gaff rigs with their tall foremasts differ markedly from the early Dutch rig, which had a very much smaller foremast and sail placed right in the eyes of the boat (Figs. 7 and 14). This fact alone possibly seems to indicate that the rig was not introduced to America directly by the Dutch.

There is one other point about the first American two-masted, short-gaff rigs which should be considered. We shall see later that the lateen rig spread to America with the first English colonists, and was apparently used on two-masted vessels. The Colonial 'pinnace' probably often set two lateen sails instead of one. Later illustrations of American, two-masted, lateen vessels seem to indicate that the masts were of equal height, or the forward mast was slightly higher. This is shown in a painting of about 1760 of a two-masted lateen vessel in Maryland published by Brewington.[70] When the American colonies were first settled, the lateen was used as a small-boat rig. The short-gaff did not come into existence in Holland until around 1640. It became very popular in America and replaced the lateen rig on most vessels. This might explain the fact that in America many early two-masted rigs tended to have both masts about the same height, even though the Dutch had much smaller foremasts.

In America the two-masted, short-gaff rig became more popular than the leg-of-mutton rig, and was usually found on larger boats. This type of rig led to the schooner rig. In fact the British 1708 two-master is fundamentally a schooner since it has a jib (Fig. 13). The earliest representation of an American short-gaff schooner is shown in the 1725 view of Boston where there is a vessel with a jib and a slightly shorter foremast.[71] The schooner rig immediately became popular in America and rapidly re-

[69] E. P. Morris, op. cit., p. 128, Plate XXIII.

[70] M. V. Brewington, *Chesapeake Bay* (Cambridge: Cornell Maritime Press, 1953), p. 14.

[71] E. P. Morris, op. cit., Plate VI, between sections I & II. Possibly an earlier American schooner is shown in A. Montanus' *America* which was printed in Holland in 1671, for R. C. Anderson, 'Schooner,' *Mariner's Mirror*, XVI (1930), 88, points out that this boat has two short-gaff boomless sails (the foremast being smaller) and a bowsprit with a stay running from its end without any headsail set. But it seems certain that there must have been one, otherwise there would have been little need for a bowsprit.

placed the Colonial 'catch' (ketch) after 1720. A ketch is also shown in the 1725 view of Boston with square main and main topsails, a lateen mizzen, and a jib. A few ketches remained in use up to 1800, at which date the ketch completely disappeared. The early ketches were from 20 to 70 tons, and the first schooners appear to have been about the same size.[72] This early form of schooner survived in many American pilot boats (Fig. 15) and led to the development of the New England fishing schooner, of which the Gloucester (Massachusetts) schooner is one of the finest examples (Fig. 15). In the Gloucester schooner and many other American

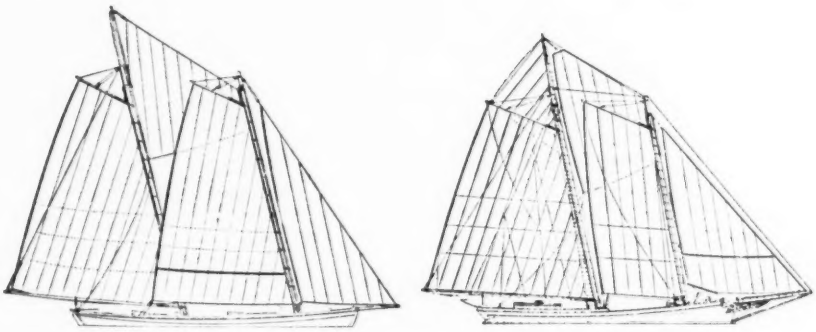


Fig. 15. American schooners. Left, pilot boat. Right, Gloucester (Massachusetts) fishing schooner. (*After Chapelle,* American Sailing Craft.)

rigs the short-gaff was lengthened to what was called a 'compromise gaff' —that is a compromise between the long-gaff and the short-gaff.

It has been suggested that the American topsail schooner was developed by the addition of topsails to a two-masted, gaff-sail rig. However, as Morris has pointed out, the topsail schooner owes its ancestry to the same type of square-rigged two-master which led to the development of the brigantine.[73] The finest example of this type of craft was to be seen in the Baltimore clipper schooner, a graceful topsail schooner. The Baltimore clipper schooners usually had masts strongly raked as in the bugeye, and it seems that they were influenced by the leg-of-mutton masts. They also preserved the tall sail of the early short-gaff sail.[74] While the square-rigger ancestry of this type of rig seems beyond dispute, it must be admitted that they also preserve the form of the early short-gaff.

[72] E. P. Morris, op. cit., pp. 6-9.

[73] Ibid., pp. 168-194.

[74] M. V. Brewington, op. cit., pp. 40-41.

V

The spritsail, the gaff sail, and the leg-of-mutton sail together form a class of sails which are strictly fore-and-aft sails. They all evolved from the original Indonesian spritsail by gradual steps. There is another great class of sails represented by lug and lateen sails which originated from square sails. The lateen is simply a specialized form of the lug in which the luff has been shortened to the vanishing point. These differ from all fore-and-aft sails by having part of the sail forward of the mast, and by having a yard which supports the head of the sail. The important difference in the sailing characteristics of the two great groups of sails is that in general fore-and-aft sails can be tacked head-to-wind by simply bringing the bow of the boat across the wind. Then without touching any of the rigging the boat can be sailed on the other tack. There are some forms of lugs and lateens which have the majority of the sail area behind the mast and may be tacked in a similar manner.

But there are many lugs which cannot be tacked into the wind since the sail backs against the mast. The forward part of the sail in this position can cause the craft to heave to and be in irons. Some sails of this nature are tacked by wearing downwind.[75] Or the sail may be taken off the yard and the yard swung to the other side of the mast. This is actually done by the Arabs of the Persian Gulf in rough weather to protect their slender yards, but obviously is a very time-consuming maneuver. In some lugs the yard may be dipped behind the mast by partially lowering the sail, if the halyard is fastened forward of the center part of the yard.

There is little doubt that the lug sail developed from the square sail by a slow process of evolution similar to the gradual changes made in fore-and-aft sails. The main difficulty with the square sail, when used with the wind forward of the beam, was the fact that the forward edge (luff) of the sail could not be kept sharp and taut. This limited the degree that the sail could be pointed into the wind. On small craft the luff could be straightened by carrying the tack well forward and setting it up strongly. This had the unintended effect of raising the peak of the sail and tilting the forward end of the yard down (Fig. 16-B). From a distance such a sail appears to be what is known as a dipping lug. The sail is square headed, and the rig has often been called a 'half-lug.' Thus any square sail can be set in this manner and becomes a lug sail. This alone shows why it is not practical to classify all lugs as fore-and-aft sails.

There are two modifications of the half-lug which can be made in sim-

[75] I have given a complete description of this maneuver as practiced on many Arab dhows: R. LeB. Bowen, Jr., 'Arab Dhows of Eastern Arabia,' AMERICAN NEPTUNE, IX (1949), 122-129.

ple forms. One is to move the yard slightly aft of the mast (Fig. 16-C). Another is to cut the head of the sail at an angle and leave the halyard in the center of the yard (Fig. 16-D). Changing the cut of a sail is a very drastic step for any primitive seafaring group to take. However, it can be assumed that the shape of a square, half-lug sail influenced some neighboring sailors not familiar with the sail to cut their sails in an apparently similar manner. Once the head of the sail was cut at an angle, the first true dipping lug was obtained.

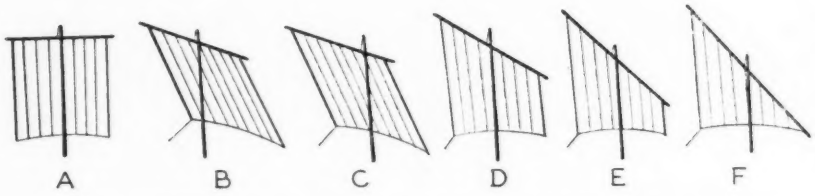


Fig. 16. The evolution of the dipping lug and the lateen sail. A, Square sail. B, Half-lug sail made by pulling one tack of a square sail forward into the wind. C, Dipping lug made by hanging a square sail from the forward part of the yard. D, Dipping lug with a long luff. E, Dipping lug used by the Arabs and known as the 'Arab lateen.' F, True lateen sail of triangular shape.

The dipping lug is characterized by a sail without a boom. When sailing to windward the tack is usually hauled far forward, often to the bow. In the East the dipping lug is found concentrated in the western Indian Ocean. Today along the west coast of India the half-lug and the high-peaked dipping lug are found on primitive plank-built boats and on single outriggers. Some of these Indian half-lugs are hung from the center of the yard, others are hung from a point forward of the center. None of these have booms. When the head of these Indian sails is cut at an angle, the luff is long, being about half the length of the leech (Fig. 16-D).[76]

The sail that the Arabs of the Persian Gulf, the Arabian Sea, and the Red Sea use is also of this loose-footed, high-peaked, dipping lug type, but with a short luff (Fig. 16-E). I have previously pointed out that the Arabs do not have the triangular lateen, and that there is no evidence that they ever did have the true lateen. Technically the sails of the Arabs are *not* lateen, but rather they are short-luff, dipping lugs. However, the literature is full of references to the lateen sail of the Arabs, so that by common usage it might be said that the sail of the Arab dhow was lateen. In some

[76] R. LeB. Bowen, Jr., 'Eastern Sail Affinities,' AMERICAN NEPTUNE, XIII (1953), Fig. 17.

of my early work I have mentioned the 'lateen' sails of the Arabs, but in later work I have referred to this quadrilateral sail as the 'Arab lateen.' It is also called a 'settee' sail by some. While the Arab lateen is certainly not triangular, in some instances the luff is so short that at a distance the sail looks triangular, especially when the tack is pulled forward.

There is evidence which indicates that some Arabs may not always have had such short luffs on their sails. As late as 1840 some of the fishing craft of Oman carried dipping lugs with luffs half the length of the leech.[77] A similar sail was seen about 1800 at Massawa.[78] Today the merchant vessels of Oman have sails with luffs one third the length of the leech, while in the Persian Gulf the luff is only one fifth the length of the leech. In the Gulf of Aden the luff is the shortest of all Arab lateens, being only five per cent of the length of the leech. Thus some of the Arabs of South Arabia formerly used loose-footed, dipping lugs with a longer luff. It seems that after A.D. 1500 these Arabs modified their lugs gradually to the form they are today, under influence of the Portuguese lateeners (with triangular sails) which were in the Indian Ocean in large numbers during the sixteenth and seventeenth centuries.

In the Red Sea and in East Africa the indigenous sail up to the middle of the nineteenth century was a square sail made out of plaited palm leaves. About 1800 Bruce sailed out of Kosseir (Egypt) at the head of the Red Sea in a sewn vessel that 'had one sail, like a straw mattress, made of the leaves of a kind of palm tree.'[79] In Yemen a square mat sail was used on merchant vessels until after the middle of the nineteenth century.[80] The sail used on the primitive *mtepe* of East Africa was a square mat sail with a boom. Thus the extension of the Arab lateen sail to East Africa and the Red Sea has taken place only in the last hundred years or so (Fig. 17).

The literature is full of statements that the Arabs introduced the lateen sail to the Mediterranean and spread it westward in their conquests. Now since it is evident that the Arabs have never had the true triangular lateen, it is apparent that they could not have *introduced* it to the Mediterranean. However, I do not think anyone doubts that the Arabs *spread* the triangular lateen sail westward in the Mediterranean. Thus it seems that the Arabs must have come upon the lateen somewhere in the Eastern Medi-

[77] Ibid.

[78] V. Valentine, *Voyages and Travels to India, Ceylon, the Red Sea, Abyssinia and Egypt in 1802-1806* (London, 1811).

[79] J. Bruce, *Travels to Discover the Source of the Nile*, 2nd ed. (Edinburgh: Archibald Constable and Co., 1805), II, 107.

[80] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morrison and Son, 1792), I, 240, 242; Osgood, *Notes of Travel* (Salem, 1854), p. 252.

terranean. The Arabs fought and won their first naval battle in A.D. 655. It appears that the fleet was constructed entirely at Alexandria with the aid of Coptic shipbuilders, who apparently had profited from Greek science of which Alexandria had been the center from its foundation.[81]

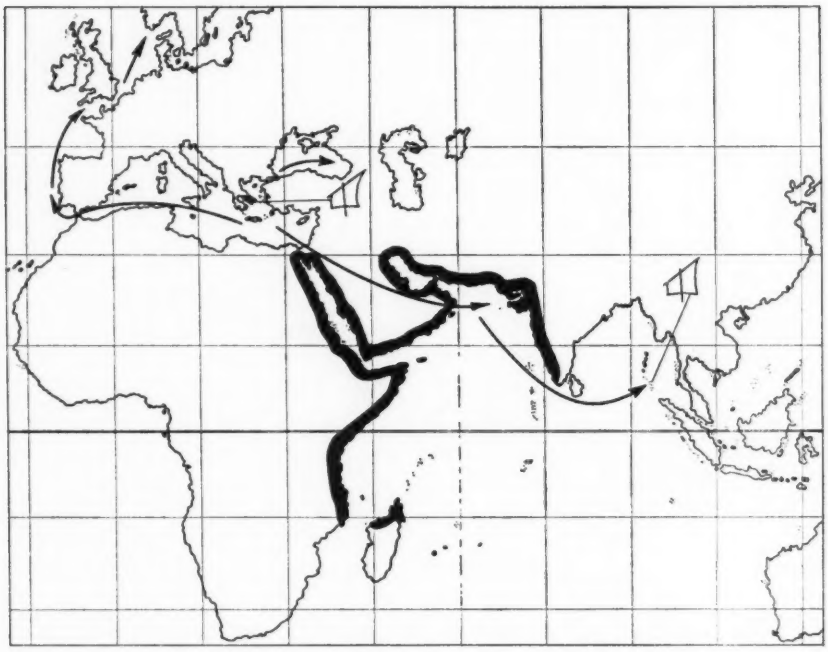


Fig. 17. The distribution of the dipping lug sail. The dipping lug was probably invented in the Eastern Mediterranean. It was undoubtedly introduced to the western part of the Indian Ocean by Graeco-Romans during Roman times, where it became the 'lateen' sail of the Arabs. It gradually spread westward out of the Mediterranean as far as Scandinavia. It is also found in the Black Sea. The extension of the Arab lateen to the Red Sea and East Africa has taken place in the last hundred years or so.

Whether the Arabs found the triangular lateen in use in Egypt at that time or whether they copied it later from others in the Eastern Mediterranean is not apparent. When a dipping lug with a short luff has the tack pulled far forward, the sail appears to be triangular and it is difficult

[81] G. F. Hourani, *Arab Seafaring* (Princeton: Princeton University Press, 1951), p. 57.

from a distance to tell whether or not the yard runs all the way to the tack or not. This is undoubtedly the reason many early writers referred to Arab lugs as lateen sails. The Arabs may have copied such a lug sail from others in the Eastern Mediterranean and assumed that it was triangular. Thus the 'invention' of the triangular lateen may well have been an accident. This is purely suppositional for the earliest pictorial evidence we have for the lateen sail are two ninth-century A.D. Greek miniatures.[82]

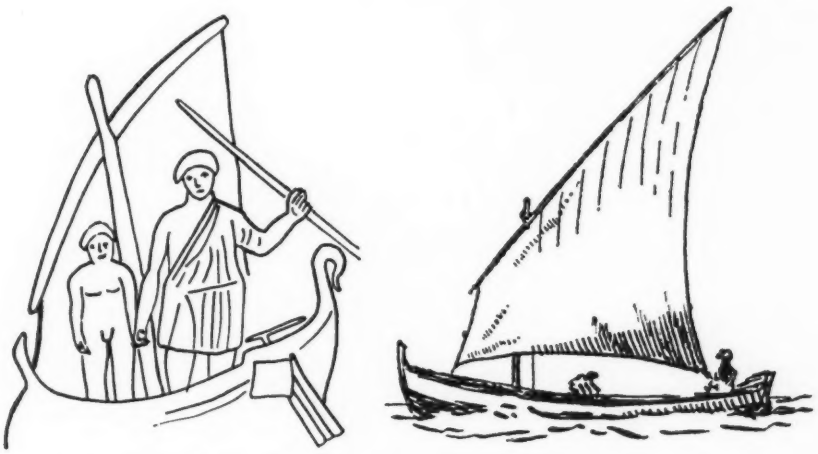


Fig. 18. Dipping lug sails. Left, second or third-century A.D. relief on a tombstone found near Athens. (*Drawn by the author from a photograph by Conze,* Die attischen Grabreliefs.) Right, modern lug from Brindisi, Italy. (*After Smyth,* Mast and Sail in Europe and Asia.)

There is evidence that the dipping lug was used in the Eastern Mediterranean shortly after the start of the Christian era. Conze has reproduced a good photograph of a second or third-century A.D. Greek tombstone found near Athens showing a dipping lug (Fig. 18).[83] There is no rigging evident. Only a yard and the forward and after edges of the sail are shown. The foot of the sail does not show in the illustration, but it

[82] R. LeB. Bowen, Jr., 'The Rig of Early Medieval Warships,' *Mariner's Mirror,* 40 (1954), 315-320.

[83] A. Conze, *Die attischen Grabreliefs* (Berlin, 1893-922), IV, No. 2064. Cf. also F. Moll, op. cit., Plate B II, Fig. 108. Lionel Casson ('Sails of the Ancient Mariner,' *Archaeology,* VII [1954], 215-219, and 'Fore-and-Aft Sails in the Ancient World,' *Mariner's Mirror,* 42 [1956], 3-5), has published photographs of the second or third-century Greek tombstone found near Athens which make the sail look like a lateen sail. However, Professor Casson has told me that the photographs were of a reproduction of the original made from the Augustan bimillennnial celebration held in Rome in 1939. For a more complete discussion of this problem see R. LeB. Bowen, Jr., 'The Earliest Lateen Sail,' *Mariner's Mirror,* 42 (1956), 239-242. Actually the sail is a lug sail as shown in Fig. 18 here.

may well be evident in the original bas relief. Another similar sail is to be seen in a first-century Pompeiian painting.[84] I had previously dismissed these sails as poorly drawn square sails, since it was generally believed that during Roman times neither the Greeks nor the Romans knew any better sail than the square sail. We have seen above that Lionel Casson has shown that the fore-and-aft spritsail was known in the Eastern Mediterranean during Roman times. There now is no reason to doubt that these two sails represent dipping lug sails with short luffs. Thus the spritsail and the dipping lug sail were both used in the Mediterranean in the early centuries of the Christian era.

Today dipping lug sails with short luffs are found sprinkled over the Mediterranean. I found evidence of such a sail in 1954 at Maiori on the Sorrento Peninsula in Italy. The luff was one fifth the length of the leech and the yard was hung from its forward third. There was no boom. A similar sail from Brindisi on the heel of Italy has been shown by Smyth (Fig. 18).[85] Very similar short-luff dipping lugs are also found in Armenia at the very eastern end of the Black Sea.[86] The same sails are found on the Atlantic coast of northern Spain and on the island of Madeira.[87] There is little doubt that many of these lugs have been in continual use since Roman times, although the westward spread of the sail probably continued even after the Arab expansion.

The dipping lug is also a very common sail among certain of the northern European fishermen. It was found along the southern shores of England, in Scotland, in Belgium, in northern France, and in Norway. The first known use of the word 'lug-sail' in England apparently occurs in the *London Gazette* of 1677.[88] In England the lug sail was later replaced by fore-and-aft sails, and of course now most sails have vanished. Many of these luggers probably developed by the substitution of lug sails for the square sails found on certain two and three-masted fishing boats, all of which had small foremasts, and many of which were similar in rig (square) to the buss ships used by Dutch fishermen (Fig. 19).

The inspiration for these northern European lug sails probably came directly from the Mediterranean. Hundreds of Mediterranean galleys sailed north into the English Channel during the sixteenth century.[89] Un-

[84] F. Moll, op. cit., Plate B XIa, Fig. 32.

[85] H. W. Smyth, *Mast and Sail in Europe and Asia* (London: Wm. Blackwood & Sons Ltd., 1929), p. 320.

[86] L. Surmelian, 'Armenia,' *Holiday*, 19 (February 1956), 52-55.

[87] H. W. Smyth, op. cit., pp. 269-272.

[88] G. R. G. Worcester, *The Junks and Sampans of the Yangtze* (Shanghai: Inspectorate General of Customs, 1947), I, p. xii.

[89] E. K. Chatterton, *Fore and Aft* (London: Seeley, Service & Co., 1912), p. 57.

til the start of the Renaissance the galleys of Venice were square rigged, but by the sixteenth century the lateen sail became the rig of the galley.[90] Sometime afterwards the lateen sail was replaced by the lug on some galleys.[91] There is an old model of a Dutch galley which shows three lug sails on a foremast, a mainmast, and a mizzenmast (Fig. 19).[92] There are bowlines on the foresail and the mainsail. It is interesting to note that the modern lug sails of Venice also have similar bowlines on their sails, as did those of the Blankenberg (France) luggers until their recent extinction.

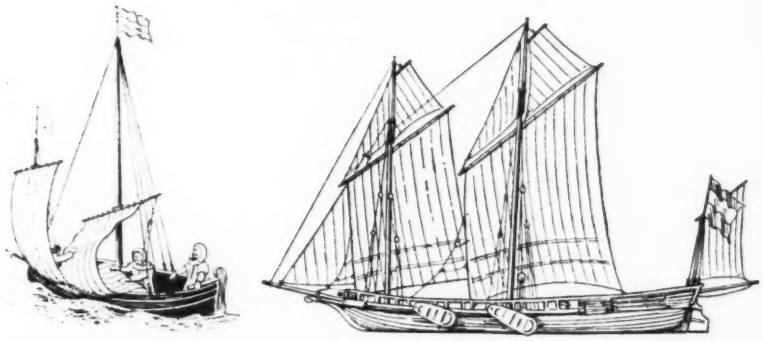


Fig. 19. Early Dutch sailing boats. Left, 'buss-ships' used by the fishermen, with square sails on both masts. Right, lug-rigged galley with dipping lug sails on the foremast and mainmast. (*After Chatterton,* Fore and Aft.)

From Holland the idea of the lug spread west over the northern French coast. It also spread to Norway and caused the ancient Viking square sail to be changed to lug sails of varying patterns (Fig. 17). Chatterton felt that the southern English lugs came directly across the English Channel from France and the Low Countries during the late eighteenth century,[93] but he suggested that the lug sails of Scotland were copied from the Norwegians.[94] That the rig of at least some English luggers came directly from Holland is shown by the fact that Steel's work of 1794 shows an English vessel practically identical to the Dutch three-masted lugger model illustrated in Fig. 19.[95] Chatterton suggests that the lugs of northern Europe evolved independently of all others, and were the result of 'different

[90] Ibid., p. 46.
[91] Ibid., p. 47.
[92] Ibid., Fig. 6, p. 57.
[93] Ibid., pp. 221, 236, 240.
[94] Ibid., pp. 225, 278.
[95] Sir Alan Moore, 'Rig in Northern Europe,' *Mariner's Mirror,* 42 (1956), 33.

seamen arriving at the same conclusions in the presence of similar problems.'[96] But can we say that these people could have known of the lug rig and then suggest that they developed it independently? Such an independent development is made all the more difficult by the known connection with Mediterranean vessels, which used both the lateen and the lug.

The problem of the origin of the dipping lugs found in the western Indian Ocean is intriguing. In general the indigenous sails of the East have two characteristics in common: (1) a boom at the foot of the sail (or two sprits at opposite sides of fore-and-aft sails); (2) sails made out of plaited palm leaves. The dipping lugs of the western Indian Ocean lacked both of these qualities. The Arabs were apparently using a lug as early as the ninth and tenth centuries A.D., for Arab travelers and geographers writing during this period mention frequently that a ship's sail looked like a whale's fin when seen from a distance.[97] These ships were from the Persian Gulf. We also know that some of the Arabs made their sails out of cloth during this period. It might be suggested that the Arabs brought the dipping lug back from the Mediterranean before the ninth century. However, this does not seem plausible in view of the fact that the Arabs appear to have used the triangular lateen in the Mediterranean.

The boom of the East came from Bronze-Age Egypt, where square sails had been confined between a yard and a boom from at least 3000 B.C. Such a square sail was also used by Syrian sailors as late as *c.* 1500 B.C.[98] However, by 1200 B.C. both Egyptian and Syrian sails appeared without a boom, as is shown by an Egyptian relief of a sea battle *c.* 1200 B.C.[99] After this date a boom was foreign to the sailing craft of the West until reintroduced after A.D. 1500. But in the East a boom remained the rule rather than the exception. Thus the occurrence of sails without booms in the Indian Ocean demands an explanation. These sails without booms could have been introduced by Western sailors who were in the Indian Ocean during Roman times.[100] The Greek merchants of Alexandria who carried out this trade for the Roman Empire may have used the dipping lug locally in India and perhaps even in the Persian Gulf. Probably the grapnel

[96] Ibid., p. 49.

[97] G. F. Hourani, op. cit., p. 103.

[98] T. Säve-Söderbergh, *The Navy of the Eighteenth Egyptian Dynasty* (Uppsala, 1946), pp. 54-59.

[99] E. Marx, 'The First Recorded Sea Battle,' *Mariner's Mirror*, 32 (1946), 242-251.

[100] This is contrary to what I wrote in 'Eastern Sail Affinities,' AMERICAN NEPTUNE, XIII (1953), 187-198, where I stated that the dipping lug of the East evolved somewhere in the western Indian Ocean, probably in the Gulf of Oman or the Persian Gulf. In view of the fact that the dipping lug was used in the Mediterranean during the early centuries of the Christian era this original hypothesis must be abandoned.

form of anchor was introduced to the Persian Gulf during this same period.[101]

We will see below that the first Graeco-Roman vessels to enter the Indian Ocean in force at the very start of the Christian era were probably single-masted vessels. At this time some of the local vessels of the Indian Ocean copied the bow-spritsail which these vessels undoubtedly carried. During the first and second centuries A.D. certain Indians and Arabs copied the Graeco-Roman practice of painting colored patches at both ends of their ships and placing oculi or other designs on them.[102] A characteristic of vessels of the Persian Gulf seems to have been a lack of colored end patches with oculi on these patches. Thus it might be suggested that the dipping lug could not have been introduced to the Persian Gulf by Westerners because the colored patch and oculus is lacking. However, I believe that this simply indicates that the dipping lug was introduced to the western Indian Ocean at a different time, possibly not until at least the third century, or later. It might even be explained by the importation of Greek shipwrights from Syria by the Sassanids, although there is no historical record of this. I favor a diffusion by water via India, rather than any indirect method such as Syrian shipwrights.

Alexander the Great reached the Indus in India in 326 B.C., and the Greeks established a kingdom in northern India. Although preliminary nautical exploration was initially carried out, it was not followed up after Alexander's death in 323. Tarn shows that there is certain evidence for the presence of a short-lived, Greek-controlled kingdom on the Gulf of Hormuz during the second century B.C.[103] Since our earliest evidence of the dipping lug sail in the Mediterranean comes from the second century A.D., we certainly cannot suggest that the Greeks introduced the dipping lug to the Persian Gulf in the fourth century B.C. However, if the Greeks knew the dipping lug as early as the second century B.C., then they may have introduced the sail to the Persian Gulf then rather than later under the Roman Empire.

In Iran the Parthians gave way to the Persian Sassanid dynasty around A.D. 225, which lasted until 651. The Sassanids seem to have encouraged local maritime activity, which did not flourish before. In the third cen-

101 A detailed discussion of the evidence for the introduction of the grapnel to the Persian Gulf by Westerners during Roman times will be found in R. LeB. Bowen, Jr., 'Arab Anchors,' *Mariner's Mirror*, 43 (1957), 288-293.

102 For a discussion of this see R. LeB. Bowen, Jr., 'Maritime Superstitions of the Arabs,' AMERICAN NEPTUNE, XV (1955), 5-48; XVII (1957), 262-291; XVIII (1958), 235, 245. For another opinion see C. Quigley, AMERICAN NEPTUNE, XV (1955), 191-198; XVIII (1958), 25-58.

103 W. W. Tarn, *The Greeks in Bactria and India* (Cambridge: University Press, 1951), pp. 481-485.

tury the Emperors built many sea and river ports and were sailing from the Persian Gulf to East Africa. In the fourth century the Latin historian Ammianus Marcellinus related that there was much navigation carried out by the Sassanids in the Persian Gulf. By the sixth century A.D. Persian nautical activity was marked. The Persians were sending ships to Ceylon and acted as the intermediaries for the silk trade between China and the West. In the sixth century the Persians sent a small naval force to conquer Abyssinian South Arabia. There is also some evidence to indicate that the Persians had sailed to China before the start of Islam in the seventh century.[104] The Persians were presumably using the dipping lug during this period.

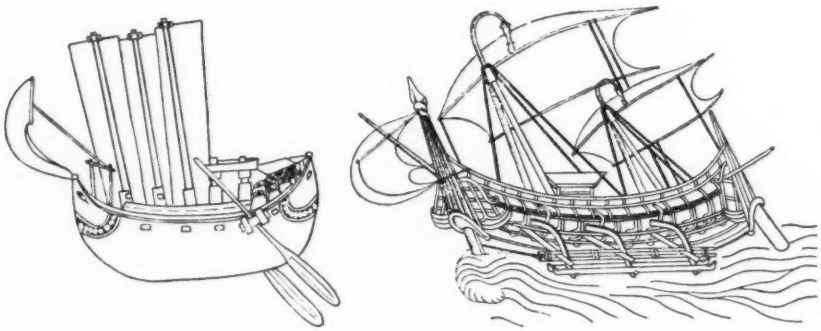


Fig. 20. Early Eastern ships. Left, seventh-century A.D. three-masted ship with bow-spritsail from Ajanta, India. (*Sketch by the author from a photograph by Hourani*, Arab Seafaring.) Right, two-masted Boro Budur (Java) ship of the eighth or ninth centuries showing a bow-spritsail. (*After Hornell.*)

VI

There is one other large group of lugs to be considered—the balance and standing lugs. There is little doubt that these forms of lugs were invented in the Far East. We would be forced to this conclusion on the basis of the present distribution of the sails alone. The antiquity of the tall Chinese lug is beyond question. Professor Joseph Needham tells me that a Chinese text of the third century A.D. mentions as many as four sails set in a row and arranged obliquely to the wind. This seems to be a reasonably accurate description of the tall Chinese lug. The seventh-century, three-masted, Ajanta ship has tall Chinese lug sails (Fig. 20), which are

[104] The historical facts in this paragraph are taken from G. F. Hourani, op. cit., pp. 36-48.

today found on large Chinese junks around Amoy and the Yangtze River. This type of sail probably led to the twelfth-century, Angkor two-master (Fig. 21).[105] While these latter sails appear to be gaff sails, I believe that they were intended to represent the tall Chinese balance lug. The modern Chinese rig which is most familiar to Europeans from models and pictures is the three-master from southern China with a foremast, a mainmast, and a mizzenmast, each carrying irregular quadrilateral sails with battens widely separated (Fig. 22). This sail probably evolved from the tall Chinese lug which is found along the northern China coasts.

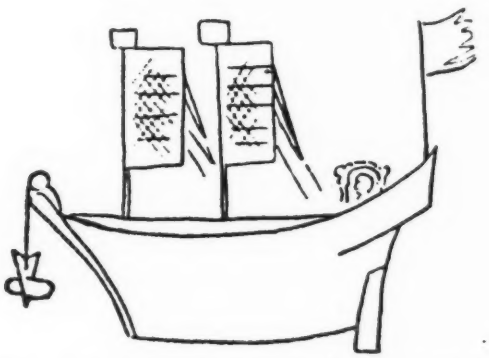


Fig. 21. Twelfth-century two-master from Angkor (Indo-China) showing sails with battens and multiple sheets. (*After Poujade,* La Route des Indes et ses navires.)

There were two extreme forms of sails known in Bronze-Age Egypt before 1500 B.C., both possessing booms. One is a sail which is twice as wide as high. This form probably spread to the Bronze-Age Indus civilization (possibly via Mesopotamia) and thence farther east. It evolved to the sail seen in the Boro Budur balance lug of the eighth or ninth century (Fig. 20). The other extreme in Egypt was a tall sail twice as high as wide. This sail may have given rise to the shape of the Chinese tall lug (Fig. 22). A square mat sail of these proportions with a boom is found in Melanesia at Humboldt Bay in Dutch New Guinea.[106] The only other sail of these proportions in the Pacific is found on the reed rafts of Lake Titicaca in South America. This is also a mat sail with a boom and is set on a sheer mast.

[105] J. Poujade, *La Route des Indes et ses Navires* (Paris: Payot, 1946), p. 257.

[106] A. C. Haddon, *Canoes of Melanesia, Queensland, and New Guinea* (Hawaii: B. P. Bishop Museum, 1937), p. 314.

While the Chinese could have developed the shape of the tall lug sail independently, it does not seem likely in view of the fact that a square mat sail of the same proportions is preserved in other places in the East. However, the battens of the Chinese lugs are certainly an Eastern invention, and since they are only used by the Chinese, they may be credited with the invention (Fig. 22). I have always felt that the orientation of the battens in

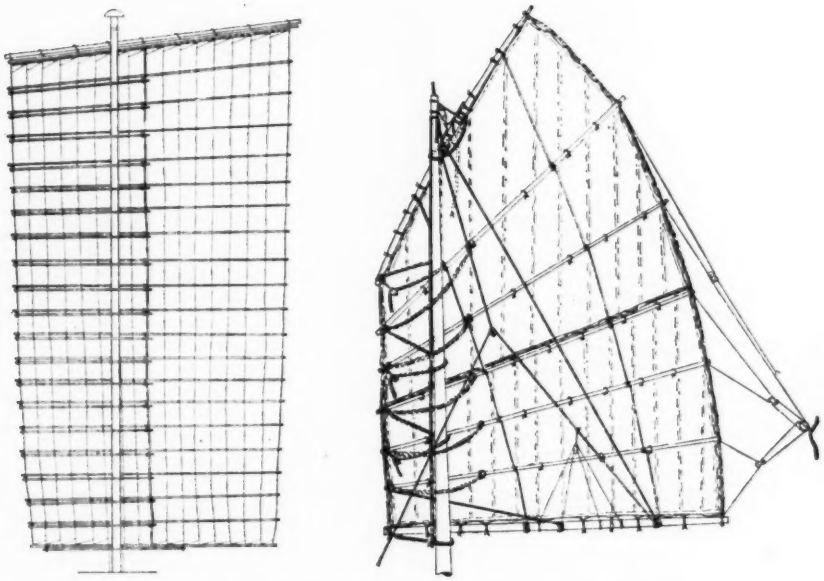


Fig. 22. Forms of Chinese balance lug sails. Left, tall lug with many battens. Right, high-peaked lug with only a few battens. *(After Worcester.)*

this type of Chinese sail could have originated by the simple process of plaiting successive palm branches together. When branches are thus plaited together the central stem forms a natural built-in batten (Fig. 23). If the process is continued so that a sail twice as high as wide is obtained, there are battens spaced at frequent intervals up the sail. Later, separate battens were added to imitate this effect. What more logical process can explain it? Evidence for such an origin is preserved in eastern New Guinea. Here sails are actually made by interplaiting the branches of palm trees, so that the sails have built-in battens.[107]

[107] Ibid., pp. 244-246.

The first form of Chinese lug probably involved a tall rectangular square sail. The yard was moved aft and an efficient balance lug was obtained. Such are the sails of the seventh-century, three-masted, Ajanta ship, which are technically balance lugs, because the boom projects forward of the mast (Fig. 20). The eighth or ninth-century Boro Budur ships also have balance lugs with the boom projecting forward of the mast. Later in the Far East the forward end of the boom of some sails was moved farther aft so that the tack of the sail did not project past the mast, and the

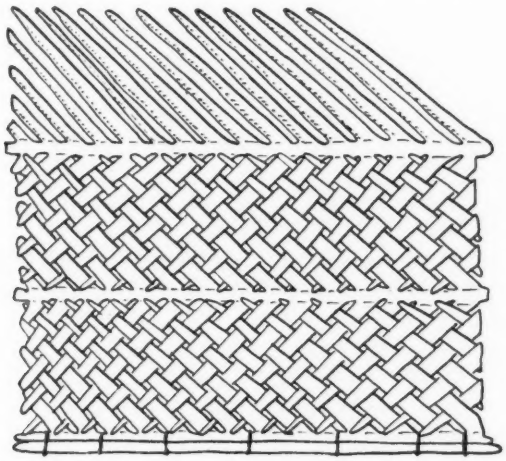


Fig. 23. Sail made by plaiting successive palm branches together. The central stem or midrib provides a natural 'built-in' batten, and could explain the origin of the battens of the Chinese lug sails. Sails are actually made in this manner today in New Guinea.

standing lug was obtained. Today the standing lug is concentrated along the shores of the Malay Peninsula and Indo-China, and in the Bismarck Archipelago.[108] The Bismarck Archipelago is simply an extension of the mainland.

In the original experiments it must have been very difficult to keep the tall, Chinese lug flat when pointed into the wind, and it must have been more difficult to keep the leading edge (luff) taut. The idea of tying each batten to the sail to accomplish this certainly ranks as one of the foremost nautical inventions, for it is difficult to see how this could have happened accidentally. The *raison d'être* for the idea is evident. When the mast was to

[108] R. LeB. Bowen, Jr., 'Eastern Sail Affinities,' AMERICAN NEPTUNE, XIII (1953), 106-107.

leeward of the sail (when sailing into the wind) it kept the sail flat and aided in keeping the luff taut. Perhaps originally the sail was taken down on different tacks and set up again so that the mast was always to leeward. Then one day the idea occurred to someone that the rig could be permanently set on one side of the mast if the battens were simply tied to the mast with a loop of rope. Originally these 'battens' were probably built into the sail as palm-branch stems.

A single, loose, rope cringle around each batten would accomplish this. Out of this simple arrangement the complicated rigging of the Chinese lug sail evolved. It is interesting to note that the modern, tall, Chinese lug sails have a great number of battens indicating their possible origin from palm stems (Fig. 22). On the other hand, the irregular quadrilateral sails have only a few battens (Fig. 22). The high peaks of these latter sails were probably influenced by the Arab dipping lug which was undoubtedly in the South China Sea in strength by the ninth century A.D. Worcester also concluded that the Chinese lug sail probably became high peaked under Arab influence.[109]

The Persians appear to have made occasional trips from the Persian Gulf to Canton in South China in the seventh and eighth centuries. This sea route was the longest in regular use by mankind before the expansion of European commerce after A.D. 1500 and should certainly receive attention as one of the most meritorious maritime achievements. By the middle of the ninth century regular sailings were made from the Persian Gulf to China by the Moslems. This trade was made possible by the simultaneous existence of large empires at each end of the route. The Abbasid caliphs encouraged the fusion of Arab and Persian subjects into an Arabic-speaking Moslem unity. Today modern Arab sailors show their debt to the Persians by numerous nautical terms with a Persian origin. The Moslem voyages to China ended abruptly in 878 when the rebel Huang Ch'ao sacked Canton and massacred an estimated 120,000 Moslem, Christian, and Jewish merchants and traders.[110]

When sailing to China in the ninth century Moslem ships sailed from India due east to the Nicobar Islands where they took on water and bartered with the natives who came out in canoes.[111] It is certainly more than a coincidence that the modern natives of the Nicobar Islands set dipping lugs without booms on their canoes on from one to four short bamboo masts.[112] These are very similar to many of the Persian Gulf and Gulf of

[109] G. R. G. Worcester, op. cit., p. 66.

[110] The historical facts in this paragraph have been taken from G. F. Hourani, op. cit., pp. 61-78.

[111] Ibid., pp. 71, 110.

[112] C. B. Kloss, *In the Andamans and Nicobars* (London, 1903), p. 79, plate facing p. 154.

Oman Arab lateens with luffs from one quarter to one third the leech. They are exceptional in the East for native sails by lacking a boom and by being made out of cloth, although sometimes they are made from plaited pandanus leaves.

The sailors of the Malay Peninsula accomplished the same thing as did the Chinese (with their balance lug) by moving the sail aft until the tack of the sail was abreast the mast (Fig. 4). This did two things. In the first place, the majority of the sail was aft of the mast so that the area left in front of the mast did not affect the pulling characteristics of the sail appreciably with the sail backed against the mast. Further, the great weight

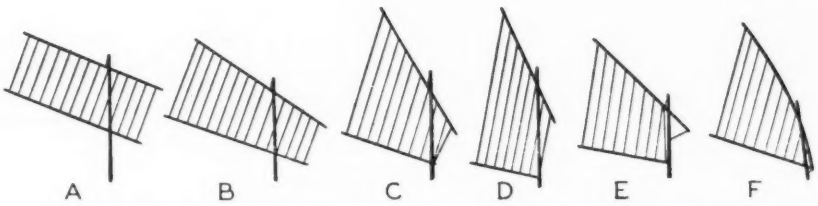


Fig. 24. The evolution of the lugs of Indo-China. A, Boro Budur balance lug. B, Modern balance lug of Java with the yard and boom slightly converged. C, Standing lug of Indo-China. D, Standing lug of the Gulf of Siam. E, 'Gaff sail' formed by cutting off the forward part of the Indo-China standing lug (C). F, Sail in the form of a leg-of-mutton sail produced by converging the forward ends of the yard and boom of the standing lug (C).

of the sail aft of the mast pulled down on the after end of the yard and caused the luff of the sail to pull up strongly on the forward end of the boom which was made fast at the base of the mast. The first experiments in this direction produced the balance lug of the eighth or ninth-century Boro Budur ships (Fig. 20). We may surmise that the standing lug probably evolved since the ninth century. It is interesting to note that many of the modern standing lugs of the Malay Peninsula have proportions similar to the Boro Budur sails, wider than high (Fig. 4).[113]

The balance lug of the Boro Budur type also led to another very interesting series of standing lugs in Indo-China and the Gulf of Siam. Apparently under the influence of the Arab dipping lug which was in these waters in the ninth century, the old rectangular Boro Budur sail became high peaked. The sail has the same shape as many Arab dipping lugs but is set as a standing lug with a boom (Fig. 24-C). There is a form of sail seen

[113] R. LeB. Bowen, Jr., op. cit., Figs. 23-29.

in Java which is intermediate between the rectangular balance lug and the high-peaked standing lug (Fig. 24-B). However, the Indo-China standing lug of Fig. 24-C did not necessarily have to go through this stage. It may have been altered in one step to copy the high peak of the Arab dipping lug. In some places in the Gulf of Siam the proportions of what was probably the original Indo-China standing lug are changed so that the sail is very tall (Fig. 24-D). In one place in Indo-China the standing lug was altered by cutting off the part of the sail forward of the mast. The after ends of the yard and the boom were dropped, and the yard was left projecting forward of the mast (Fig. 24-E). This change was perhaps made in imitation of the European gaff sail. A final change was made in the original high-peaked standing lug of Fig. 24-C by converging the yard and the boom until the forward ends could be fastened together (Fig. 24-F). This latter change may have been influenced by the triangular Indonesian lateen of Java.[114]

The standing lug is also found along the Atlantic coast of northern Europe. The sail is found in France and Belgium, where there is a boom at the foot of the mainsail, although there is no boom on the standing lug set on the foremast. It seems that the idea of changing the dipping lug to a standing lug was introduced to France from the Gulf of Siam. It is certainly more than a coincidence that the French were active in Indo-China as early as 1787. That the standing lug was not introduced to the Gulf of Siam by the French is shown by the affinities of the native sails (made of narrow strips of matting) with other Eastern sails (Fig. 24). Most sails of known European introduction to Eastern Seas are made of cotton, and are at times used in conjunction with older mat sails.[115]

One of the largest areas where the balance lug occurs is in the Adriatic and the Aegean Seas, where it is found on Italian and Greek craft. This is one of the few places in Europe where the balance lug is found. In most of the Italian trading boats, the *trabacola*, the two masts are about the same height and generally vertical (Fig. 25). The foresail has more the cut of a balance lug often with considerable boom length and sail area forward of the mast, while the mainsail is cut more like a standing lug. The flat-bottomed *bragozzi* of Venice has a small foremast raking forward indicating an ancestry from the Roman *artemon* mast, as we shall see below (Fig. 25). These lug sails around Venice are elaborately colored, each with a dif-

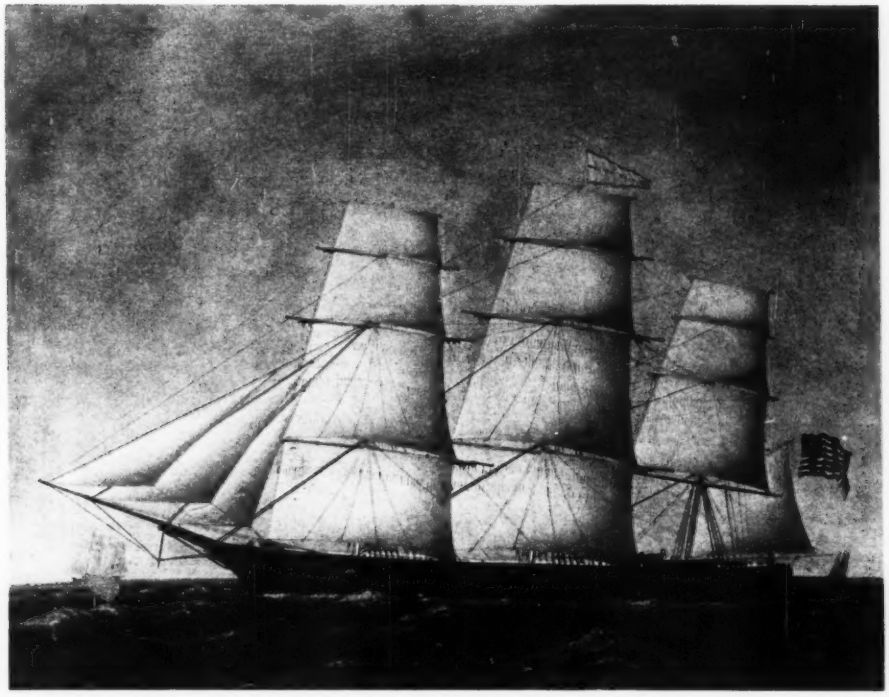
[114] The illustrations of the Indonesian sails have been made from photographs published by P. Paris, *Esquisse d'une ethnographie navale des peuples Annamites* (Rotterdam: Prince Hendrick Maritime Museum, 1955), and from sketches by J. Poujade, *Bateaux en Indochine* (Saigon: J. Testelin, 1940).

[115] R. LeB. Bowen, Jr., op. cit., pp. 195, 209.

Pictorial Supplement

Paintings

THE pictures which follow are a series depicting clippers as the great maritime artists of the period saw them. All have been reproduced by The Meriden Gravure Company, directly from the paintings themselves without retouching. Many are known to have been done for officers or owners of the vessels themselves and, before accepted, ran the gauntlet of rigging- and construction-conscious eyes. The originals of the entire series are owned by the Peabody Museum of Salem.

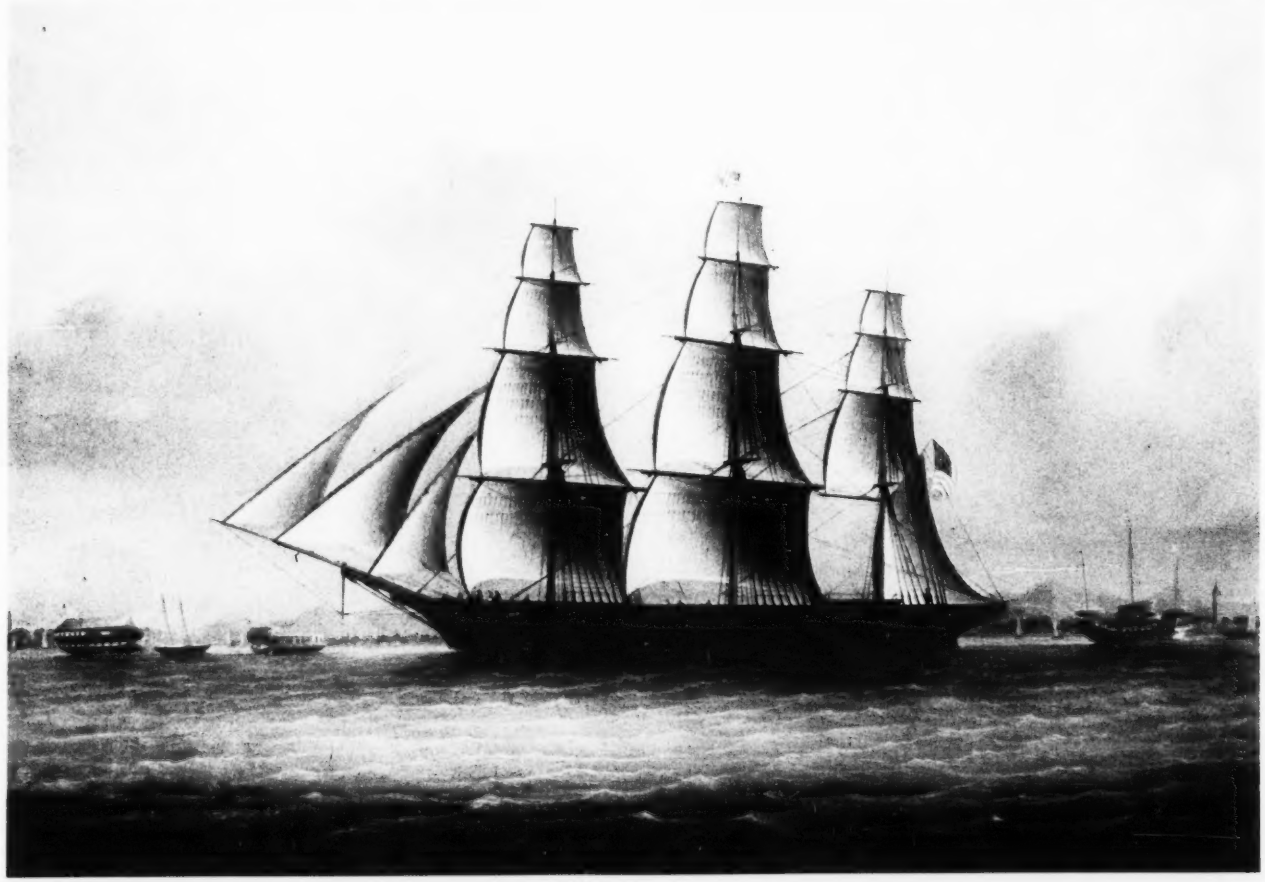


Witch of the Wave, built by George Raynes, Portsmouth, N. H., 1851. Sold Dutch in 1856 as *Electra.* No record after 1871.

PLATE XVIII

Houqua, built by Brown and Bell, New York, 1844, as a man-of-war for the Chinese. She proved to be too small and remained a merchantman, one of the vessels which greatly influenced the clipper design. This painting, done for her owners, is attributed to William Marsh. It shows her dismasted in the Indian Ocean in 1848. Re-rigged as a bark in 1857. Her fate is not known.

done for her owners, is attributed to William Marsh. It shows her dismasted in the Indian Ocean in 1848. Rerigged as a bark in 1857. Her fate is not known.



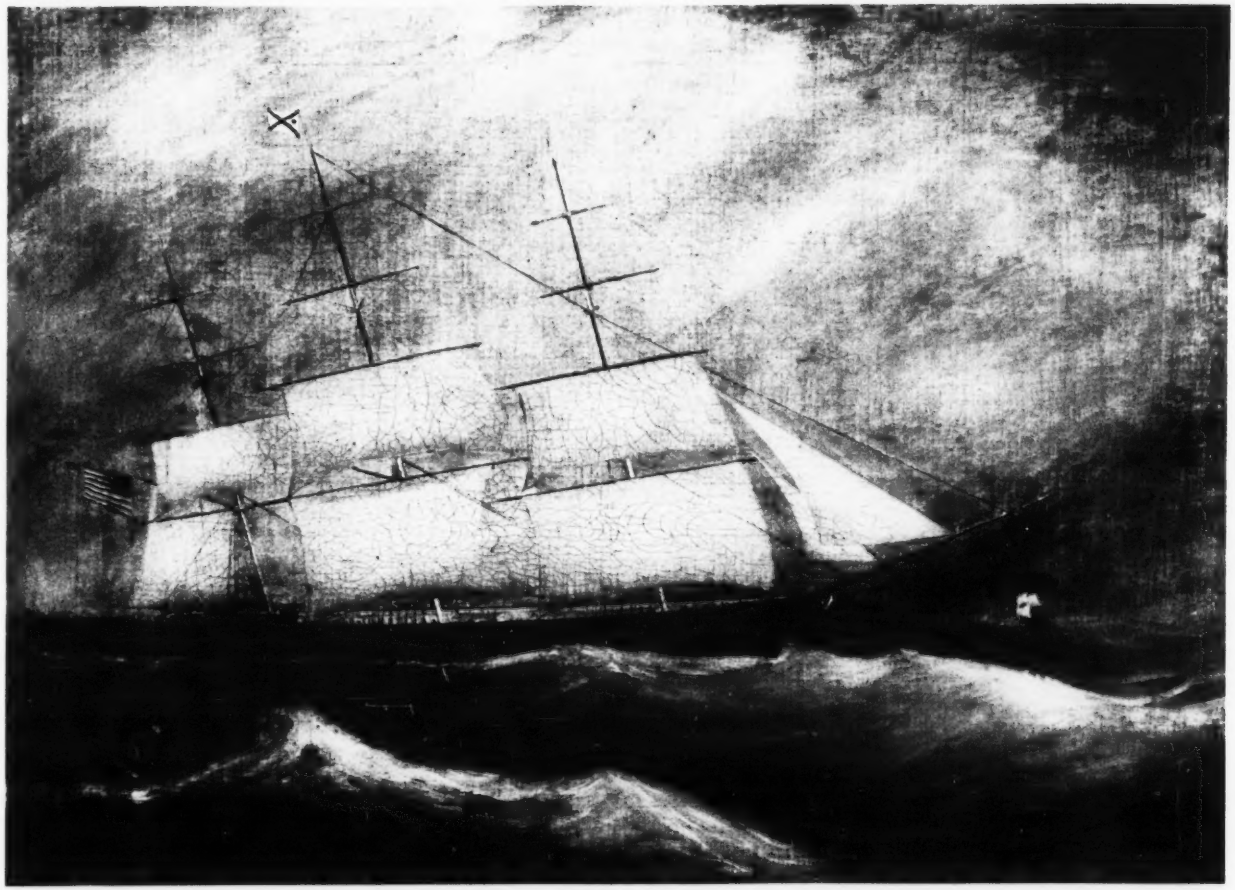
Sea Witch, built by Smith & Dimon, New York, 1846, from a design by John W. Griffith. Wrecked near Havannah in 1856. Painted by an unidentified Chinese artist for her commander.

PLATE XIX

PLATE XX

John Bertram, built by Ewell & Jackson, East Boston, 1850. Sold German in 1855. Abandoned at sea 1883. Painted by Clement Drew of Boston, for Captain Bertram.

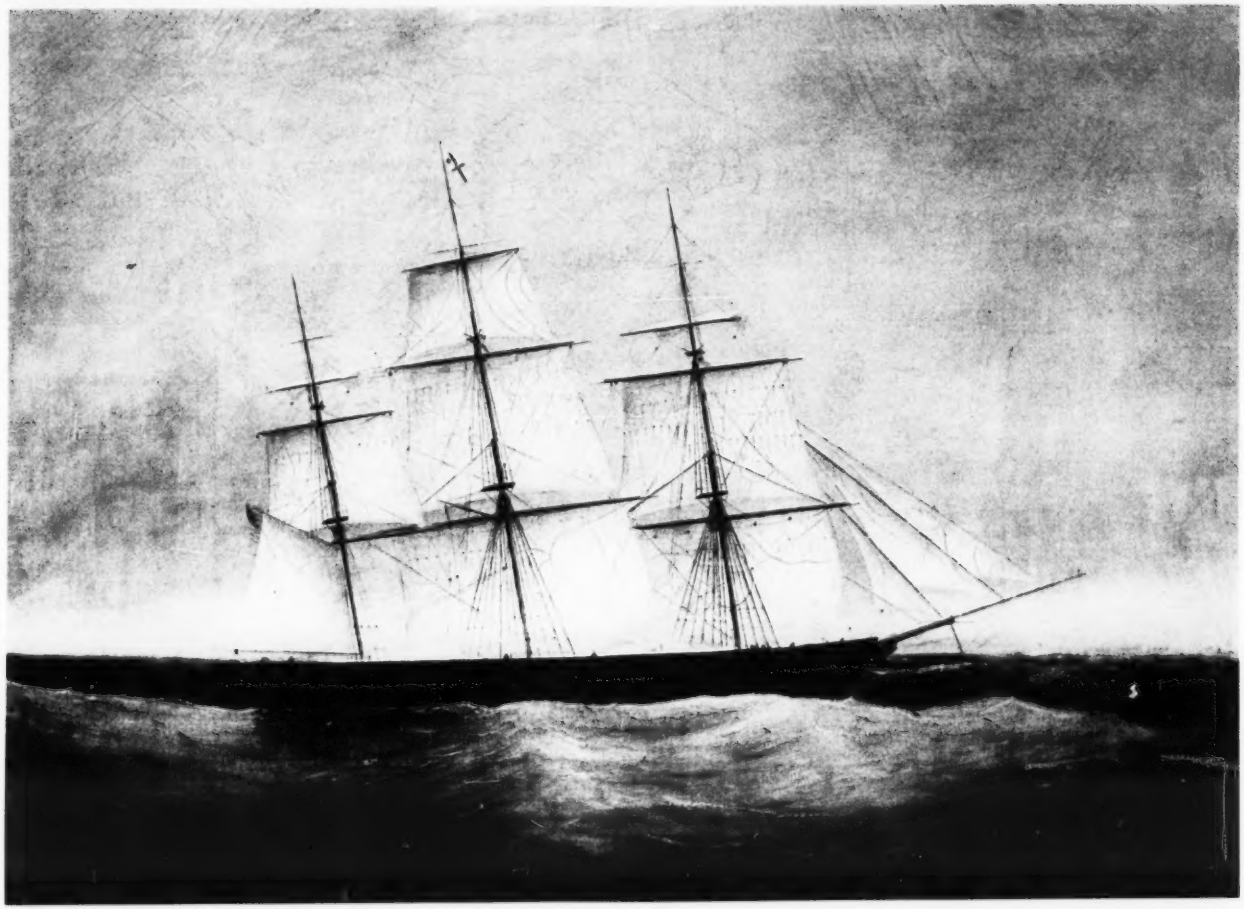
Painted by Clement Drew of Boston, for Captain Bertram.



Shooting Star, built by J. O. Curtis, Medford, Mass., 1851, the first clipper built there. Sold Siamese in 1857. Wrecked on Formosa 1867. Painting attributed to Clement Drew for her owner.

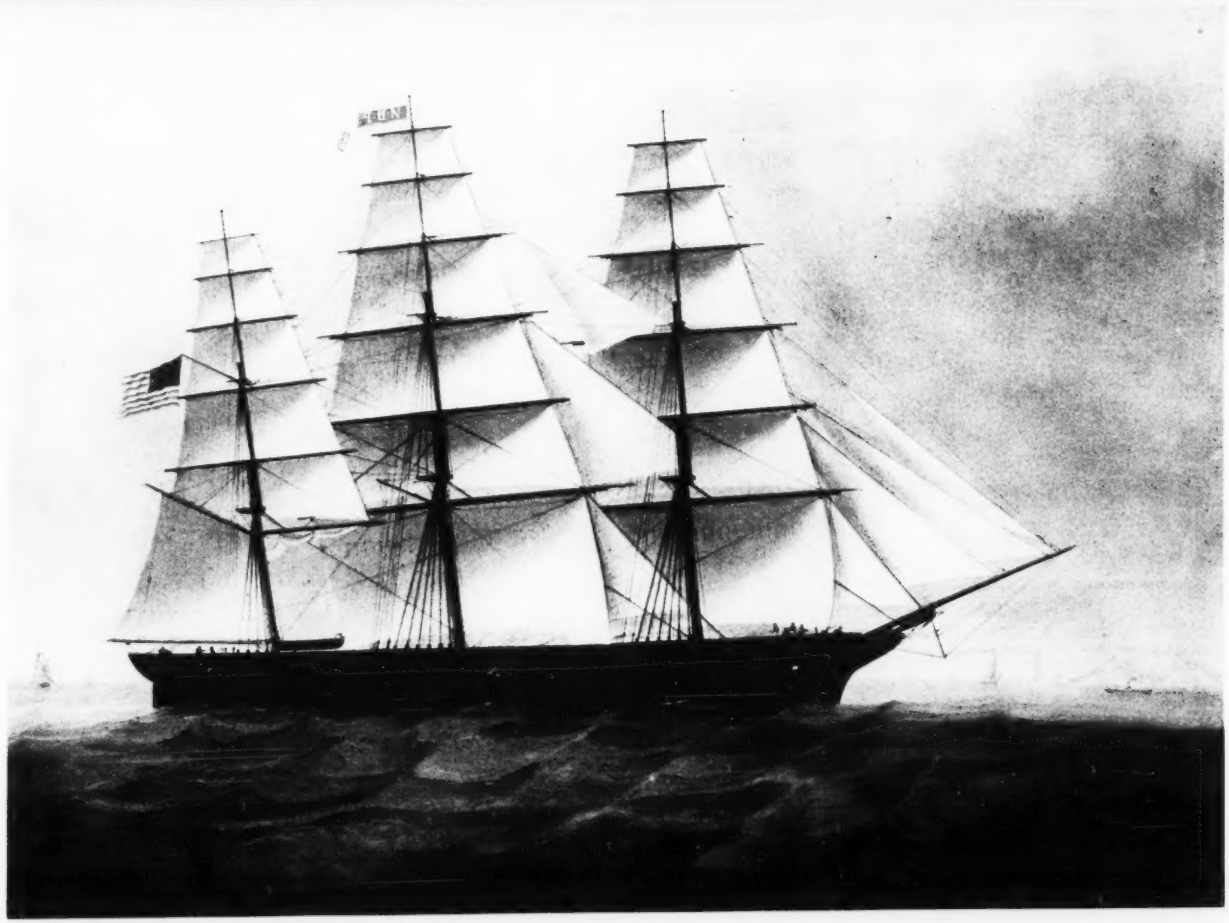
PLATE XXI

PLATE XXII



John Wade, built by Hayden & Cudworth, Medford, in 1851. Lost in Gulf of Siam 1859. Painting attributed to Clement Drew for her owner.

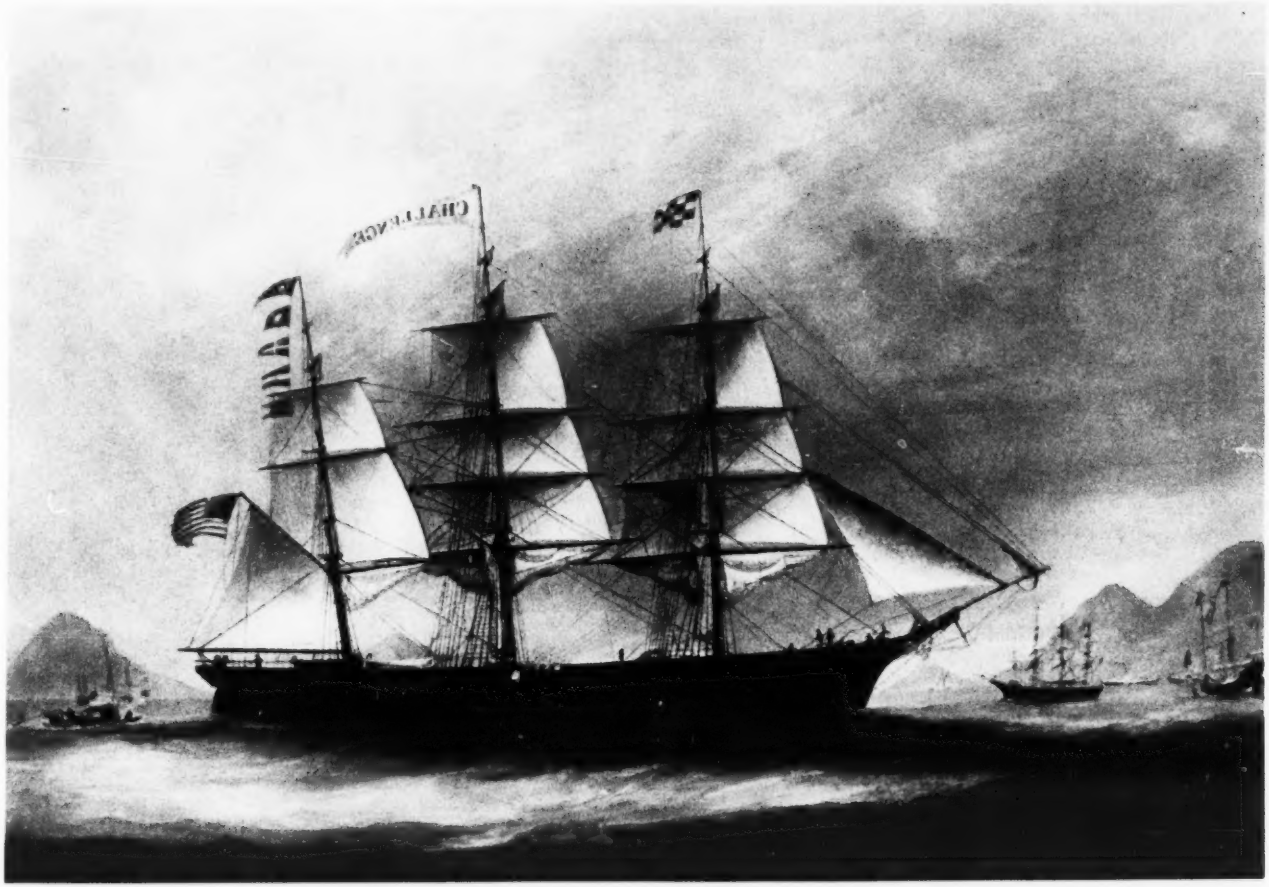
John Wade, built by Hayden & Cudworth, Medford, in 1851. Lost in Gulf of Siam 1859. Painting attributed to Clement Drew for her owner.



N. B. Palmer, built by Westervelt & Mackay, New York, 1851. Sold Norwegian. Abandoned at sea 1892. Painted by Hingqua for her owners.

PLATE XXIII

PLATE XXIV



Challenge, built by William H. Webb, New York, 1851. Sold British 1862, renamed *Golden City.* Wrecked on French coast 1876. Painted in Pearl River by Huqua for her captain, 1860.

ferent design, and are one of the picturesque sights in the city of waterways.

The luffs of both sails of these Italian luggers are usually set taut with bowlines. To prevent the sails from backing against the mast when the mast is to leeward, the Italian lug sail has its tack purchase brought to the deck at some distance away from the centerline of the boat. H. W. Smyth made an extensive study of the sails of Europe and related that this method of setting down the tack of a lug sail was not practiced anywhere else.[116]

Many Greek fishermen of the Aegean also use two-masted luggers. In most instances the Greeks have altered the rig so that the mainmast is for-

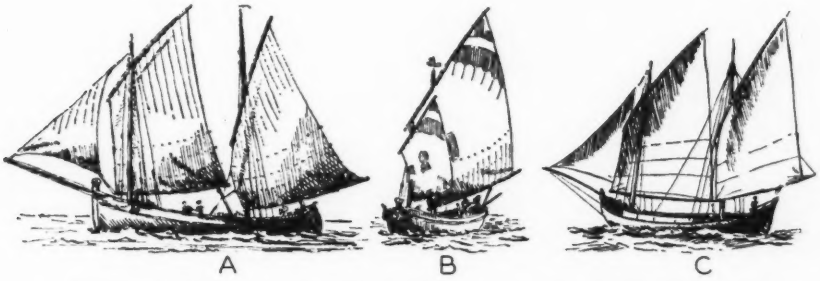


Fig. 25. Luggers of the Eastern Mediterranean. A, Italian *trabacola*. B, *Bragozzi* of Venice with highly colored lug sails. C, Greek trading boat of the Aegean. (*After Smyth*, Mast and Sail in Europe and Asia.)

ward, and they often set the mizzen as a standing lug (Fig. 25). The mainsail is set in balance lug style with a small portion of the boom projecting forward of the mast, or it may be set as a standing lug. The luffs of the Italian and Greek lug sails range from one third to one half the length of the leech.

The problem of the origin of lug sails with booms in the Eastern Mediterranean is not difficult. We have seen that the Greeks and the Romans possessed the dipping lug in the early centuries of the Christian era. A boom was simply added to the indigenous dipping lug, automatically converting it to a balance lug. Then the balance lug was later set in a standing lug position, perhaps by influence from western Europe or perhaps from the East.

[116] H. W. Smyth, op. cit., p. 311.

To be continued

French coast 1876. Painted in Pearl River by Huqua for her captain, 1860.

A Voyage for Health

BY CAPTAIN JOHN F. CAMPBELL

THE following narrative was put together from about fifty letters written between Nathaniel L. Rogers and his son, William L. Rogers, of Salem, Massachusetts. The letters were written between the years of 1840 and 1842.

In the year 1840 William L. Rogers, the eldest son of N. L. Rogers, was a law student at Harvard. William suffered a great deal from an eye infection; this condition was affecting his studies to such an extent that he felt that he could not continue with them. His father suggested that a long sea voyage in one of his vessels might clear up this condition. So he armed his son William with what he considered the three necessary items to start this cure: a well-filled sea chest,[1] a letter of credit[2] and a letter of instructions.[3]

With this equipment his father put him on board the bark *Sheperdess* which sailed from Boston about 15 July 1840. The letter of instructions is not only interesting as a letter from an affectionate father to his son but, also, as a letter from an experienced seaman and worldly traveler to one who is about to make his first voyage to sea.

Salem July 10, 1840

My dear son

As you are about embarking on a long voyage in the *Sheperdess* for N. Holland for the benifit of your health *I trust the long experience* which I have had at sea & ashore will enable me to give you some useful advise & information on the subject. I shall begin with the sea *first;* upon your departure from here, the first thing you will do is to change the *tight & stiff* garments of the landsman for the *easy & loose ones* of the sailor, you will find your thick jacket & trowsers ready to put on in your chest & I recommend your keeping them on till you get off the coast & soundings & your sea sickness over. After passing the 'Gulph' you will get into fine weather & the N. E. Trades & as it grows warmer regulate your clothing accordingly, you will probably find *at this time of year* the weather warm & sometimes calm, till you cross the Equator,

[1] N. L. Rogers to William L. Rogers, no date, lists contents of chest put aboard *Sheperdess*.

[2] Ibid., dated 10 July 1840.

[3] Ibid.

but altho' hot you must exercise by walking, hauling, pulling & helping pump occasionally & this & the fine air of the sea will much contribute to your health & pleasure. I should advise you by all means, when you get in hot weather to bathe in the evening, *not to go overboard*, but put on a pair of thin trowsers & under the lee of the longboat get the Steward to throw over you a few buckets of Salt water, unless there is a hogshead for the purpose this will refresh you & make you sleep comfortably, also *bathe your eyes* & wash your teeth in Salt water. After you cross the Equator or Line as the sailors call it & get into the S. E. Trades, it will begin to grow cool & you will of course dress accordingly, but instead of putting on flannel I would increase your outside garments, with pea jacket &, as their will be no risk in leaving them off when you go ashore. I think by following these directions, you will pass away pleasantly 3 or 4 mo. of the passage out & improve your health. Always keep *a letter ready* to send home, in case you speak or board a vessel & add from day to day any thing of interest which may occur. I hope you will make yourself acquainted with men, manners & of the different places both ashore & at sea, also the elements & principles of navigation & working ships, as the great Poet says 'The proper study of mankind is man' it is fully as necessary in *your profession* as book knowledge & may turn out of very great advantage to you *hereafter*, this in addition to keeping up your knowledge of the Languages & endeavering to master the French & Spanish languages will find you ample occupation in the many leisure hours you will have on the voyage & I trust if you have your health you will turn them to a good account. Above all let me recommend you always on Sunday to read your Bible you will find particularly in Proverbs many examples & excerpts of Wisdom & Morality, which if *you think* well of them will conduce much to your happiness & usefulness. Never enter into the quarrels which often happen on board ship between the Captain Officers or crew, but keep yourself aloof & try to be a peacemaker & smooth them: let your conduct to the Captain be always respectful, recolect he is the head & it is necessary to support him in the proper subordination & disipline of the crew & assist any of the young men, who are disposed to get instruction. I have thus far given you every information that is necessary, your own good sense & the advise of the Captain I hope will fill up what else is wanting.

Upon your arrival at Hobarttown you will deliver my letter to Mr. Boyes our old friend, correspondent & merchant in that place, who I have no doubt will render you his best attention to make you comfortable & happy during your stay there, I have also given you a particular letter to I. H. Williams Esq. Am. consul of the house of Kenworthy & Co. our friends & merchants of that place, he is an American merchant of Maine & a gentleman of strict integrity & principles & with whom I have personal acquaintance & to whose care & attention I have no hestitation in recommending to you to follow *his advise*. I have also given you a general letter[4] *to show* in case you may visit any other ports, to any of our friends & correspondents, requesting them to furnish you any funds necessary for your comfort & happiness, during your stay in port, as there is hardly a port in India or the Pacific or So. America we have not done business. I hope you will always find a friend at hand when needed. I come now to what I consider the most important part to a person unacquainted with the world as & which may hereafter be of the greatest importance. I mean your associations, company, conduct &c. As regards the first I should by

[4] R.I., letter of credit dated Salem, 10 July 1840.

all means as a general rule associate with the merchants & their families & either live in their families (if invited) or what would be preferable according to circumstances, board in some private family, recommended by them & you had better lodge on board ship than to stay at public Hotels & Taverns, a respectable private boarding house is the best course, but they are not always to be found, during the many voyages I made to India, Turkey & elsewhere I never pursued any other course except in one instance in Europe, & I can truly say there was more temptations for bad company, gambling & every thing else luinstious *in that Hotel,* than all other places I visited, in fact it was my good fortune always to reside with the merchants families or some *good private house* during my voyages & travels, if this cannot be done better to stay as I have done many a time in the Mediterranean *on board ship.* If you avoid bad company, practice temperance, make yourself acquainted with business, the manners & customs of the different ports you may visit I have no doubt, that the voyage you are about making will not only be of immense advantage to you in your profession hereafter, but will enable you to carry on some little business when you return that may be profitable. You will recolect that you are the *only one* of the family that has ever visited N. Holland where we have done a great deal of business & have many correspondents, that you go amoung them under great advantages, not as a man of business, but as a member of the family & I hope you *will* sustain by your good conduct, the esteem which I believe these gentlemen I have mentioned hold for us & I shall feel amply rewarded by the same in bestowing on you as good an education as was in my power & for all the anxiety & interest I have felt for you.

Take as little medicine as possible, but always keep your bowels open, when you are feverish take salts, but as many people at sea are always more or less costive, instead of Salts I should recommend taking cream of tarter, castor oil or some other gentle purgative, but the less you take & can get along with the better. You must not think of your eyes, there is perhaps more sympathy between that & the mind than any other member of the body & if you do not read, Keep the body in activity, *this is absolutely necessary* for your comfort.

I have now done & endeavoured as far as in my power to give you all the directions & advise I am possesed of, & I have had as you know some little experience in the world ashore & at sea & I trust you believe I give them as your Father & *most interested* in your welfare, except your Mother & Brothers & Sisters who may hereafter look up & have a right as their oldest brother for advise & assistance when I am not here. And may God preserve you & return you in good health to your family is the wish of all of us & always write & let us hear from you when an opportunity offers, when you are abroad the Merchants will inform you, how to get your letters along via England &

I remain with sincere affection
your father
N. L. Rogers

Thus informed, William sailed from Boston on a voyage he was to regret making. *Sheperdess* was commanded by Captain Hooper. Also on board, in addition to the crew, were Captain Millett as supercargo and several passengers. It is interesting to note that a day after *Sheperdess*

sailed someone came on from New York looking for two Polish passengers who owed a lot of money in that city. Even in those days people found occasions to take a slow boat to China.

Sheperdess went direct to Hobart Town, arriving in that port after a passage of four months, which was lengthened considerably by calms which prevailed until they crossed the Line. He writes home that seasickness never affected him but he says that he had considerable trouble with the 'gravel.' After *Sheperdess* had been out ten or eleven weeks, 'we got out of firewood and were supplied by an English vessel near Tristan de Cunha.' This in addition to the celebration when the Line was crossed is all he reports on the passage out in this letter. As for Hobart Town he says, 'According to Capt. Millett's account the *Sheperdess* has brought her cargo to a bad market. The lemon syrup has been sold for 27 shillings.' He also in this letter to his father dated at Hobart Town, 20 November 1840, tells of the convicts: 'It is a strange sight to see 2 or 300 convicts chained going to their days labour.' This and reporting to his father that 'I have taken lodging at Mr. Morrill's (an American who formerly sailed out of Salem),' is all that he reports in his first letter home.

N. L. Rogers' first letter to his son William is dated Salem, 15 August 1840, and sent via England on *Great Western*. He says, 'It is now about a month since you left us & from the fine chance which prevailed after your departure you must have had a pleasant time off the coast & soon got on your *sea legs*.' He then commences to give his son the latest news from home. He states that things in the commercial community are the same. 'In the political world great changes are taking place in favor of "Old Tippicanoe" judging from the Elections as they are coming in daily from the S. & West & I think there is every prospect that you will find Harrison Pres. & the "Log Cabin & hard cider" converted into "White House & Champaigne" before you return.' Then he goes on with news concerning the family and mentions the fact that he expects *Black Warrior* to load soon for a voyage. He closes the letter with, 'Tell Hooper all well every thing the same.'

N. L. Rogers next hears from his son in a letter from Hobart Town dated 6 December 1840. Nothing of much interest is mentioned, only the fact, 'the Regatta which took place on Tuesday and which was a very good sight for the lovers of boat sailing for which there is a great mania here although in my opinion their sail boats are slow in comparison with some of ours, there were about a half a dozen different races three of whale boats &c. & about 1000 persons were present including the governor.' He also mentions that 'There was a sale of the cargo or rather of

part of it at auction on Thursday of which as I suppose Capt. Millett will give you an account I will say nothing.'

The next letter home to his father is from New Zealand, dated April 1841. He is now aboard the bark *Lydia*, another of his father's vessels. In this letter he gives his father an account of why he left *Sheperdess*. The following excerpts from this letter sums up, in his opinion, the type of men his shipmates were.

I have written you both by the *Sheperdess* which sailed about a week or ten days since for Tahiti &c. Also by the *France* a whaler. In my letter per *France* you will find an account of my treatment on board the *Sheperdess* also a slight sketch of Milletts character &c. which as she will probably get home first being called a fast sailer I shall not trouble you again with the particulars only saying that if anything should happen so that you should not receive the letter to believe nothing that either Millett or Capt. Hooper say about me if the *Sheperdess* should arrive before the *Lydia*. . . . old Millett who had no authority in the vessel that I know of when she was at sea has quarreled with every one who was in her & at last with Capt. Hooper a night or two before she sailed from here. But leaving such worthless & selfish individuals to themselves & their own consciences if they have any.

In this same letter he goes on to say,

I will state the reason why I have not written more. I was quite unwell when I was in Hobart Town with that complaint which I told you I had just before I left home and after I got to Sydney on the passage to which the 2d day out we were struck by lightining which splintered the flying jib boom sending pieces of it on deck & passing off somehow by the chains. I suppose without doing any farther damage. We were in a stark calm with the rain pouring in torrents for about 5 minutes & then holding up a little again accompanied with most vivid lightining & trememdous thunder it lasted about 20 or 30 minutes and was a very narrow escape for us having so much powder & rum on board but I am almost (although perhaps it is impious) tempted to think it was judgement upon us for having such an old sinner as Millett on board.

He now relates the following: 'We heard yesterday by an arrival from Sydney that Gen. Harrison had been elected President of the U. S. and a gun was fired in commemoration of the event from the *Statesman* of Salem which is laying here. . . .' It seems as though Captains Millett and Hooper are much on his mind and he again drifts back on that subject to his father. 'When I left the *Sheperdess* for the *Lydia* I was quite unwell but am happy to inform you that I am now pretty well (as the doctor a regular quack I suppose & I thought so when I heard him talk, whom Millett & Hooper got on board for me after keeping me awake every night till 12 or 1 o'clock by carousing & playing cards & making all possible noise although once or twice I was unwell & spoke to Capt. H. afterwords

when he only laughed at me. . . .' Thus were some of the reasons that young William departed from *Sheperdess* to seek a more congenial life aboard the ex-whaler *Lydia*. Before leaving off with *Sheperdess* here are a few interesting excerpts from a letter William wrote his father concerning the goings on on board *Sheperdess*. This is from Bay of Islands dated 13 April 1841. This was probably the letter that he sent off via *France*, a whaler that was leaving for home.

he [Millett] & Hooper had it ashore more like two dogs than decent people one accusing the other of having seen him drunk & the other telling him that he had never had to carry him home. . . . There has been a regular turn over in the vessel since we left home the mates got their discharge in Sydney the steward (who was a very good one) & one or two of the best sailors ran away in Hobart Town on Millett's account as far as I could learn. As the mates were wrong, in my opinion & Millett accused me of taking their side when he wanted to pick a quarrel with me you are at liberty to tell him in my name that it is *false* that I ever took their side so far from that I thought Capt. Millett was right. He (old Millett) also told me that he didn't know what I was sent out as a spy & I heard in Sydney & the person who told me said that he could swear to it that Capt. Hooper told him that he thought I was sent out for the same reason although I care nothing for what they say. . . .

He goes on to say:

Capt. Hooper's conduct towards me since he left Hobart Town I consider *disgraceful*. There is one more thing which I would mention & that is that old Millett used to go to the wheel to *change the course* without saying anything about it to anyone . . . I myself know nothing about the law it would (in my opinion) destroy or materialy affect the insurance should it come to the knowledge of the backers if anything had happened besides endangering the lives of all on board & the property also & is there no law by which one I will not call him a man for he is nearer the brute creation in all his desires but nearer the devil (excuse the term) in all his aims. There are laws for steamboats blowing up & all that but this puppy is to trifle with the lives & property of others as if he had the power of an absolute monarch. If he denys it *I can prove it*. I write this when I am cool & if I had not been when he undertook to school me I should have very likely have broken his head for him with a handspike or any other weapon which chance might have afforded. . . .

He then goes on to describe his trip up into the bush. We now pick him up on board *Lydia* again as he says in a letter from the Bay of Islands dated April 1841, 'I am now in the *Lydia* on account of the number of black sheep in the *Sheperdess* flock.' He tells more of Millett and Captain Hooper then goes on to relate, '. . . the *Statesman* of Salem which is here with 1700 bbls sperm oil & is going from here soon on a whaling cruise.' In another letter from the same place dated 18 April 1841, in a letter to his father, he mentions the names of the mates that were discharged from

Sheperdess at Sydney. 'There has been quite a change there since she left home Bush & Goldsmith got their discharge at Sydney, Hills is now chief mate & Emerton steward the original one having left the vessel at Hobart Town.' This letter was sent via *Good Return*, a vessel leaving the Islands for home.

He again writes home from the Bay of Islands, 27 April 1841.

'I take this opportunity to write you per *Emily Morgan* a whaler which arrived a day or two since & is to sail soon direct for New Bedford.' He describes the Bay of Islands as a miserable place. It is interesting to note that the letter was sent by the whaler *Emily Morgan* the latter part of April and on the face of the letter it is stamped as having arrived in New Bedford by ship on September 28.

A letter dated on board *Lydia*, 29 May 1841, finds him still lying at the Bay of Islands, New Zealand. He says in this letter via *Canova* (this letter is stamped as having arrived by ship in Philadelphia, 13 October):

> Since I wrote last by the, *Emily Morgan*, we have had a trip down to Auckland on the River Thames which is the seat of the government and a miserable hole too. We did comparatively nothing there. Just before we arrived there was a great land sale & so great was the speculating mania that one acre was sold for, 1840 Pounds. We shall probably remain here about 3 or 4 weeks, we are busy now discharging cargo as Capt. Cross intends to take every thing out here and we shall either go to Valparaiso from here or direct home in ballast but most probably to Valparasio. Business is dull enough both here & at Sydney where the *B. Warrior* has gone via Port Nicholson. We saw her again at Auckland but she sailed a day or two before we arrived. The *Venice* has arrived at Sydney from Philadelphia with 4000 bbls of flour & some tobacco some of them will miss it this season or I am mistaken. I have nothing more to say except that I am very comfortably situated on board the *Lydia* and like Capt. Cross & Mr. Lendholm very well.

William L. Rogers is soon to have a change of opinion concerning Captain Cross.

William L. Rogers' next letter home is dated 2 July 1841 and still laying at the Bay of Islands. He says, 'I take this opportunity to write by the, *Mechanic*, which sails from here to St. Johns. I am pretty well but heartily tired of this place. I want to get home very much as I am tired of the sea.' As to the letter of instructions pertaining to his learning navigation he has this to report to his father:

> Navigation I am sorry to inform you as yet I know nothing of but I dont think myself that it is of much consequence as I think after this voyage I shall prefer a shore life. I should advise Augustus [his brother], if he has any notion of going to sea to take a short voyage to Europe or somewhere but not on any account to come on one of these voyages. There is no society here, no amusement & all that is thought

about is making money or getting it as fast as possible. To a person who has robust health & good fortune *to always sail in smooth water* going to sea may not be so unpleasant although it is very monotonous life but to any other I would not recommend it especially to follow it up. We have got all our cargo out & the ballast in but we shall probably be stopped here on account of men the second mate & one of the men ran away the other night & we are now three hands short having shipped one man yesterday.

William seems to be coming aware that a seaman's life is not an easy one. He is having trouble with his eyes. The gravel is troubling him. He is homesick, tired, and all sailors seem to be a rough lot. He continues on in his letter about life at sea. 'It is nearly a year since I left home. I am of opinion that the only pleasure in going to sea is in getting home again.' In this statement I concur with William. In more than fifteen years at sea, looking back, I can say it stands out in my seagoing days as one of the most pleasant events. He goes on further to report to his father the latest news about the other vessels.

We have heard that the *Sheperdess* had arrived at Tahiti the 10th of May & was to take 100 tons of cocoa nut oil in. The *B. Warrior* sailed from Port Nicholson the 2nd of June where she did but very little for Sydney I suppose. We shall sail in a day or two I suppose as we are only waiting now for the accounts to be settled and I hope in about two or three months from this time to be in a good vessel bound home from Valparaiso. . . . If I should go home in the *Lydia* which I may possibly I expect to be pretty comfortable going round the Horn as Capt. Cross has brought a small stove. I like cold weather at home very well but at sea it is bad enough as I experienced coming out in the *Sheperdess* when Capt. Hooper often used to laugh about the pleasant voyages you called it but then we kept as high as 43° most of the way from the Cape & now I suppose we shall keep in about 35°. . . . Idleness I believe leads to every vice & therefore I find as much to do as I can. There is one thing I think which the Americans are very regardless of & that is their health as they will sacrifice it most of them any time for the sake of getting money. I think that college is about as bad a place to ruin a young mans health as any as it is either worn down by study or dissipation very few keeping the true meaning. The making a young man precocious has one bad effect it makes him an old man before he is aware of it but thank the Lord I am not obliged now to ponder over Latin & Greek or mathematics all day & although I have been to places since I left home where it was the fashion to be dissapated I think I have escaped as well as most young men would whatever old Millett may say to the contrary.

We next hear of William Rogers in a letter dated 24 August 1841 from Valparaiso. 'I take this opportunity to write by the, *Emily Taylor,* which sails for Boston tomorrow.' It is noted that this letter is stamped as having arrived in Boston 13 December by ship.

We have been here about a week or ten days & Capt. Cross is going he doesn't know where but probably to Monte Video & perhaps direct home. He has not got any

freight. I suppose we might have got a freight of copper ore but being an old ship she would not have done to have carried it very well. . . . I had some thoughts of going home in the *E. L.* as she goes direct to Boston but we may possibly be at home as soon as her which I rather doubt as I think we shall go to Monte Video or somewhere that way & lay there sometime if there is any chance of doing anything. Capt. Cross I believe does all he can but to tell the truth I do not think that he is much of a business man.

The next we hear of William is at Buenos Aires in a letter to his father dated 9 October 1841. 'As there is a vessel to sail tomorrow or next day I write this in something of a hurry.' It is noted that this letter is stamped as having arrived in New York by ship on 12 December. It was carried to New York via *Harriet Rockwell*. William then reports to his father the following:

We arrived here on the 9th from Valparaiso by the way of Montevideo where we stopped only one day having 40 days passage from Valparaiso to the latter place. We had very pleasant weather coming round the Horn although it was cold & my eye which was very well until about a forghtnight before we arr'd at Valpraiso has been quite bad since and I think that the cause of it coming on again was a smoky stove which Capt. Cross had got into the cabin. . . . We laid at Valapraiso only a forghtnight and if he had laid there a week longer he might have got a freight of oil home as there was a whaler wreck'd at Talcahuana & no vessel to take it home as we learned by a vessel which sailed about a week after us & arrived at M. V. the same day. Capt. Cross is advised (& as he has no mind of his own about business matters) to wait here some time for a freight by which I mean not to be in a hurry about it. We came from Valparasio in ballast which I believe is not a very common thing.

His next letter home is dated Buenos Aires, 18 October 1841.

I take this opportunity to write by the Brig *Snow*, Capt. Snow which sails from here in a day or two direct for Salem. . . . We have been here about a week waiting for freight as yet it is uncertain whether we shall be able to obtain any or not. I am well except my eye which appears to be getting better slowly however I think if it had not been for a smoky stove which we had in the *Lydia* that it would have been well now as I should like to avoid going on the winter's coast in her chiefly on that account although being a good sea boat she is uncomfortable other ways as I have several times got into my berth when it was half full of water & the materess which I had new when I started from home is almost rotted away & moreover Capt. Cross has begun to be very disagreeable & I thought sometime ago that I was mistaken in what I wrote about Capt. Hooper as I consider his only fault was in being too easy with Millett of whom I still have the same opinion probably if I had staid in the *Sherperdess* and got trough with it I should have been nearly home by this time but I did what I thought was for the best. I learn't from Mr. Lay who arrived here a few days ago that Augustus had gone with Capt. Mugford probably to Sydney although he didn't know on what vessel he had gone in. [The vessel Augustus was in with Captain Mugford was *Grotius*.] I was not surprised when I heard it and think if I had gone after I left college the first time I should have been better off. Although I

do not like it and I think it is a chance if he will either however I am glad that he has gone with Capt. Mugford as I consider him from what I have seen & heard of him a very fine man.

We next hear from William L. Rogers from Buenos Aires in a letter dated 4 December 1841. He is now on board *Moscow*. He left the bark *Lydia* and reports to his father his reasons for leaving her.

I write this to go by the *Lydia* in which I shall not take passage for certain reasons which I hope you will approve. In the first place as she is going on the winter's coast I do not think that her accomadations are just the thing and what has more weight with me Capt. Cross will have that stove under weigh again which would ruin my eyes for months if not for years moreover Capt. Cross himself whatever he may have been once since this voyage has got reckless and he has made a bad voyage and perhaps thinks that his owners will talk to him pretty hard, would try to provoke me by every means in his power the living I say nothing about although I think it would be full as well to have a fresh mess once a week. I shall take passage in the *Moscow* which is a good vessel with comfortable accomodations & the Captain who is a young man has the reputation of being a very good man to take passage with. If Capt. Cross had told me that we were coming here I might have had a letter from you by this time and then I should have known what to have done but as it is I have to act for myself and feel satisfied that you will think I am doing right as you would not wish me to be at sea in ever so good a vessel and with ever so good a man without being where you are all the time discontented. If we get a good chance to run in we shall probably arrive about as soon as the *L*. We shall go to Boston. I am very well every way except my eye which is getting better however this is a very bad place for them on account of dust, sun on the white walls & so on. The U. S. Schooner *Enterprise* will probably sail from here for Rio in about a week or ten days when the *Concord* will be here with a new lot of officers. I should like to sail tomorrow if I thought I should be decently comfortable. I can put up with a good deal on board ship but when Captains get beyond a certain point it is time for me to leave them. From what I have seen of them ashore as well as at sea I think they are generally a rough set very conceited and very selfish although I am happy to say that I have seen one or two who were perfect gentlemen in their behaviour.

This is the last letter to be found, and the following letters dated the summer of 1842 find W. L. Rogers corresponding with his father from No. 19 Divinity Hall, Cambridge. No doubt he found his studies at Harvard more pleasant than a life at sea.

Where William's letters are full of complaints, his brother Augustus sends home to his father letters that would interest a Salem merchant. The following is an example of the letters that Augustus D. Rogers wrote to his father, Nathaniel L. Rogers. The letter shows a sample of the commodities that Salem merchants dealt in and the typical cargoes that were carried back home, with the prices received at New Holland for their goods.

To Nath[l]. L. Rogers Esq. Hobart Town Dec. 10, 1841
Salem Mass.

Dear Father

It is with the greatest pleasure that I embrace this opportunity of writing you by the Whale Ship *Panther* bound for New Bedford in about a fortnight. We arrived out on the 14th ult. nothing of importance having occured during our passage, which owing to head winds & calms was 48 days to the line, thence to the Cape 34, and the remainder 37.

For the state of the market, I refer you to Capt. Mugford's letter & the newspapers I sent you merely mentioning their general dulness, the immense quanity of goods of every description here, scarcity of money, and unwillingness on the part of purchasers to come forward &c. &c.

The *Maria Theresa* arrived here on the 3rd inst. *direct* from Boston, July 3rd. with a cargo consisting of a general aportment as you will precieve by the papers. Luckily we arrived here 3 weeks *before her* having the market (what little there was of it) to ourselves, and disposing of the following articles. All the Hops (less 24 Bales not shipped) @/11d. 380 boxes Lemon Syrup @ 25s/ & 26s/. 300 Chairs @ 5s/. 6 Casks Hams @ 17. 2 Thrashing Machines @ £12/1s-10d each. 80 Boxes Sperm Candles @ £2/3s. 50 bbls Beef @ £3/5s. 750 Oars @ /4½d. 28 Bags Nuts @ /6d. 4 Spars @ £15/1s the lot. besides several other small articles for the prices please see the Captains letter. We have bartered away about 18 bbls Beef, a few bbls of Flour, & other small articles for about 50 bbls whale oil @ 27 cts. per gall. & a little Sperm @ 85 cts.

The *Panther* is direct from King George's Sound & information from Capt. Pell (a fine man) induces Capt. Mugford to alter his plans of going to Sydney at present, which I somewhat wonder of his having entertained, knowing the very defused state of the market & the circumstance of the *Forum, Belvidere* & perhaps the *Robert Pulsford* (which sailed from here for New Zealand a week previous to our arrival) being there. So we sail on Sunday the 12 inst. for King George's Sound, where as merchant vessels seldom touch, & Whalers generally put in at this season of the year for supplies &c., it is not improbable that we shall be able to dispose of the greater part of our cargo or at least barter it for Oil, Wool &c. The Capt. of the *Panther* reports provisions rather scarce and high along the coast, and if we only get the start on the other American vessels which I think we shall as we know of none going there, a chance yet remains of doing decently well considering the times &c. New Zealand is said to be in as bad a state as Sydney immense quanities of goods being shipped from the former to the latter place. The cargo of the *Maria Theresa* is for sale at auction tomorrow, a Wm. Hooper, of Charlestown I believe, is Supercargo. Capt. Clark has been Master of some of the large packet Ships between Liverpool & the States. I rather guess they'll think themselves on the 'wrong track' this time. The *Grotius* has proved that her reputation for sailing &c. was entirely unmerited having beat the *Robert Pulsford* which was over 4 months on her passage out, by a few days. The *Maria Theresa* by nearly 5 weeks & the *Forum* which had not arrived at Sydney on the 19th Nov. We kept company with her 3 days out & then a strong breeze springing up ran to windward of her out of sight. Upon the whole she is a very strong ship, fair sailer, good sea boat, her only fault being in steering badly in strong winds which probably prolonged our passage a week. Capt. Mugford seems

much pleased with her & we all acknowledge that Uncle Richard's opinion of her was very correct though from the accts. of her sailing qualities, & the fact of her having made such long passages, one could scarcily but think she was a dull ship. We have left the proceeds of our sales here with Mr. Boyes & Pointer to be invested against our return in Wool, Hides, Pelts, Skins, &c. if to be purchased within your limits. The *Maria Theresa* intended going to Sydney from here I believe. Capt. M. had some thoughts of leaving me here to look after the wool &c. but concluded that it was hardly worth while not knowing how long she should be absent, & living here being rather expensive &c. For my own part I have as lives see the world now I am about it. Another consideration is that the weather for a month or two to come will be pleasanter than at any other period of the year. We have now been here about 4 weeks, living on board the Ship, being as economical as possible these hard times, this suits me better than living on shore, especially as we have such a steady Capt, Mates & crew. Our passengers Mrs. Coffin & son were very comfortable during the passage & have sailed for K. G. Sound on their way to meet Capt. C. at Geographic Bay, we have since learned that he has gone to Calcutta, and really Mrs. C. who is a nice woman & endured her trials with great fortitude is deserving of much pity, having left her home and wandered to the 'uttermost faces of the earth' all for nothing & at considerable expense & trouble truly '½ the world know not how the other lives'! I was much surprised at hearing from young Osborne who came out with his Father & brothers in the *Sheperdess*, that the mates & several of the crew have left her, so his Father wrote him from Sydney where he now resides. I have sold very little of my adventure here, a few cigars @ 100 p. ct. and about $300 worth of books @ 25 p. ct.

Our Rifles, Rubber Clothing &c. will no doubt sell well at K. G. Sound, Swan River & all those small places. I have not yet concluded what to invest the proceeds in, but think likely we may come across wool, at some of these small places, at a low price & perhaps if we should happen to touch at New Zealand going home, Gum Copal laid in low, if to be procured, might answer.

I heard of the *Lydia's* having arrd. out at N. Zealand some months ago, but could not learn any particulars effecting the sale of her cargo, hope she did well. The *B. Warrior* sold hers at fair prices they tell me.

At what time the *Sheperdess* sailed for home, I've not heard but hope long ere this, Wm. (to whom you will remember me with much anxiety for his welfare) has arrd. home in good health & safety. I hope you have no other vessel coming out here yet awhile, but think that it is propable in a year or so, a reaction may take place & business go on briskly again. I notice by to days paper the failure of the house of 'Duke & Co.' for liabilities to the extent of £150,000 in consequence of which, 'great excitement prevails at Sydney.' The hard times are doubtless owing to the extensive speculations in these colonies, the emense am't of foreign goods imported the few fast years, failure of the whale fisheries & many other minor causes. Our cargo being laid in so low, well aported, & of such good quality is greatly in our favor & should we get our wool &c. cheap and sell the Oil at a good price in S. America & the markets are well up at home, I think we may yet do decently well. I have thus hastily given you an a/c of the state of affairs, prospects, doings &c. thinking that although the Capt. writes you quite particularly on business yet nevertheless you would not think it amiss if I should do the same making all due allowance for my little experience in these matters &c.

Tomorrow I shall attend the sale of the *Maria Theresa's* cargo & give you an a/c of the sales &c. The *Robert Pulford* doubtless did us considerable injury here selling about £3000 worth, at the prices she obtained for her goods she could of not done much, she has left funds here to be invested in wool against her return, a young man by the name of 'Clark' being Supercargo, rather 'green' yet in business affairs I expect, he told them here he should be out again in 10 months & I believe talked of settling here & having a ship out evry 3 months. Some of them here are just 'gullible' enough to swallow such stuff, nobody could find out who his owners were not even Boyes & Pointer who transacted his business! As it is now past one o'clock at night I shall conclude with a few remarks hoping to have time tomorrow to add a long postscript & to write to each of the children & Mother to whom & all friends you will remember me affectionately. I do not expect we shall arrive home under 10 months from this time but hope otherwise.

You have probably entered on a long cold winter whilst Summer is bursting on us in all it's beauty & glory, but no distance of space or difference of Seasons can erase from my mind the endearments of home or memory of & affectionate wishes for those friends I hold most dear.

I remain dear Father, Yours truly
[signed] Aug. D. Rogers

Dec. 11th

P. S. I have just returned from the sale of the *Maria Theresa's* cargo which was dull enough, a few articles in very small lots only were purchased at quite low prices & the remainder 'bought in' The goods especially Pork & Beef looked to me quite inferior to ours also the Hams, Dried apples, Chairs &c. Amoung the sales of her cargo I notice the following. 10 bbls Beef @ £3/5s. 5 do Pork £3/10s. 10 Kegs Tobacco @ 8½, a few doz. cider @ 19s/ to 20s/. 5 boxes Chocolate @ 9½, 1 bbl. fish @ 1½ p. lb. 40 Hams @ 6d. Salmon in 6 lb Kegs @ 4/. 10 boxes Lemon Syrup @ 25s/. Soap in small lots @ 4, 3, & 2 p. lb. A few bbls of Tar & Pitch @ 15/6. 30 boxes Herrings @ 4/6, a few dry bottles Pickles @ 36/ p. doz.

I did not stay long enough to see what the Furniture, Hops &c. brought but suppose they sold in the same ratio. If they find purchasers for any large lots of the above articles of course they have to make a considerable reduction in the prices thereby making them quite low. We hauled out into the harbor this morning & expect to sail tomorrow & I shall try to write Mother & the children if I get time, perhaps & I think quite likely if we get a load of wool & Oil we shall stop at South America on our way home & if Oil is high ship the Wool home & get a freight to Europe in that case, I shall come home if an opportunity offers. Remembering to inform you at every opportunity of our doings & whereabouts & hoping to hear from you if we should happen to touch at Sydney, bye & bye, I conclude this hasty letter.

Your affectionate Son
[signed] Augustus D. Rogers

Captain John F. Campbell has spent nineteen years in all phases of marine life. Not coming through the hawse pipe but out of a bosun chair & tar pot, he was master on vessels for Wilmore Steamship Company and United States Navigation Company. He is now employed by the Panama Canal Company as a pilot in the Panama Canal. Prior to this he was with the Esso Shipping Company. His hobby is collecting early marine books.

Another Navy Rodgers

BY COMMANDER R. W. MINDTE, U.S.N. (RET.)

ON 25 November 1813 a young man entered the gates of the navy yard at New York and proceeded to the wharf where lay his future home in a new life that he had chosen. He had just entered the United States Navy as a midshipman a week before this day. Doubtless the week had been spent in bidding brave farewells to his family and friends and in gathering together the few practical personal belongings that would be required in the midshipmen's quarters of a United States man-of-war.

This new home was the United States sloop of war *Peacock* commanded by Lewis Warrington, Esq. She was a spanking new vessel having been launched there in New York less than two months before the green midshipman reported. Now she was fitting for sea and a long cruise.

William Tennant Rodgers, United States Navy, Midshipman—for that was his name and perhaps was the signature of his choice, as it appears last in a series of signatures written on the front flyleaf of his first journal[1] in a steady, smooth hand, variously as W.T.R. (with flourishes), W.T. Rodgers, U.S.N., and finally William Tennant Rodgers, United States Navy, Midshipman—was now in the brash young American Navy which was making all preparations to oppose the mighty sea dogs of Britain.

Perhaps it was on that first evening, after a preliminary tour of the sloop that Rodgers made this entry, also on the front flyleaf of his journal: '*Memo:* Not to forget that I have a home & a *few friends.*' It could be that these were the ones who saw him down to the yard or who gave him some farewell memento. And he might have been a little homesick that evening.

Peacock must have presented a scene of bustle and apparent confusion as

[1] This transcription has been made from the original journal of William T. Rodgers, Midshipman, USN. The journal was presented to the Naval Historical Foundation by Mrs. Clement Y. Randle of Washington, D. C., and Mrs. Morgan Ashley of Crescent City, Florida, in 1955. An exhaustive search has failed to uncover any relationship between Midshipman Rodgers and the well-known Commodore John Rodgers.

she, a new ship, fitted out for a long cruise. Rodgers could not help but wonder about this new life he had chosen. Could it be possible that this was the normal life aboard a man-of-war? The deck cluttered with lines, boxes, bales, barrels, and other gear, and clattering with the chattering and thumping noises made by the carpenters and riggers, the shrilling pipes of the boatswain, the rattling whirl of wooden sheaves as stores were whipped aboard; all this must have presented an exciting, thrilling scene to Rodgers those first few days.

Undoubtedly he found out early that everything that went on was new and foreign to him in spite of the fact that he held a midshipman's commission, for again on a front flyleaf he made an entry:

> 'Tis the curse of noble minds oppressed
> To compare what they *are* with what they *ought to be!*
> REEFERS ! ! !'

How many of us have had that thought, expressed differently perhaps, pass through our minds after having made a poor turn in column formation or after having handed in that well-known day's work with the ship's position in twelve fathoms in Great Salt Lake?

Eventually order was created from apparent chaos for on 29 December 1813 *Peacock* hauled into the stream off the navy yard and the midshipmen took their own berths, having lived on board U.S.S. *Alert* during the fitting-out period. At last this was the Navy! A permanently assigned berth, a sea chest for stowing one's own gear and the ship getting more and more to look like a naval vessel instead of like the back room of a ship chandler's shop.

The entire crew was eventually gathered aboard and signed on the articles and in January 1814 Rodgers made another entry on a flyleaf of his journal:

> The United States Sloop of War *Peacock*
> Commanded by Lewis Warrington Esquire was
> *Launched* Monday 27 Sept 1813 at New York
> Mounting twenty thirty-two pound carronades & two
> Long Eighteens—carrying officers included, one
> Hundred & 60 odd men — — Jany 1814 — New York

The lad must have had some leisure time for reading and cogitating or, more likely, Lewis Warrington, Esq., had had a little talk with the midshipmen for just below the last entry is inscribed:

> *RICHES* have wings, *GRANDEUR* is a dream, the only

_____[2] thus flower on earth is *VIRTUE*, the only lasting treasure, *TRUTH* ! - - - - - -

VIRTUE
INTEGRITY
PERSEVERANCE

Sure guides to

WEALTH &
HAPPINESS - - - - - W.T.R. - - - - - -

Then on the evening of 12 March 1814 having previously received orders, *Peacock* weighed anchor and stood out to sea. The very next morning she was chased by three sail, apparently the ships of the enemy. But, being a new and clean-bottomed vessel and commanded by a very capable seaman, she soon ran them out of sight. Three days later in a storm she 'shipt a sea over the stern which stove the jolly boat to pieces.' Not a word in the journal about being seasick out in the Atlantic during these blustery March days!

There followed weeks of cruising down the coast of Florida and through the Bahama Keys stopping once at Amelia Island to discharge some powder, canvas & copper on board the United States gunboat *No. 165*, commanded by Samuel Dow.

Peacock frequently ran down and boarded vessels encountered at sea but they all proved to be friendly American or neutral vessels. Among them was the Russian ship *Joacquim* from Peppenberg to St. Marys. One might wonder what sort of men commanded and manned a Russian ship of those days.

On 28 April at 6:00 A.M., *Peacock* sighted a sail on the weather beam standing to N.W. and gave chase to her. Now let Rodgers tell us the rest:

> at 8 made chase out to be a Brig she bearing down for us - - at 25 minutes before 11 the Brig bearing down for us, hoisted *English Colors* and shortened sail—beat to quarters, cleared ship for action, made her out a Man of War - - at 5 minutes before 11 commenced the action with starboard guns within pistol shot—at 40 past 11 after a heavy and almost incessant cannonade our opponent struck her colors. She proved to be His Britannic Majesty's Sloop of War *Epervier*, Richard W. Wales Commander, of 16 32 pounders & 2 eighteens—& one hundred & 53 men, the damage we received was our Fore Yard severely wounded, nearly cut in two, some few back stays cut away & many & hot grape twined through our sails—& but *two men slightly wounded*. The enemy lost his Main Top Mast, his Fore Mast very badly wounded, his Larboard Fore rigging cut all away but one shroud - - many shot hole between wind & water - - three guns dismounted 12 killed & 13 wounded - - Not a shot struck our

[2] Illegible.

hull - -! One Hundred & Eighteen Thousand Dollars were found on board the prize which was removed to the *Peacock* - - W. Nicolion 1st Lieut Wm Greeves Midshipman—Wm Baldwin Masters Mate & myself & 12 men were put on board to carry our prize into a port in the United States after having rigged a spare Main Top mast & bent some new sails—We continued in company standing toward St Marys until Saturday April 30th when in sight of Amelia Island we parted co - - the *Peacock* being chased by a *Frigate* & we [*Epervier*] by another she being to leeward of us—about 7 same day in the evening the vessel in chase of us being dist about 4 miles sent her boats to reconnoiter us, but they on hearing that we were prepared to meet them pushed off & left us to make a port. Sunday May 1st boarded a Spanish schooner from Savannah bound to St Augustine who informed us of the *U.S.S. Adams* Capt Morris being at 'TYBEE LIGHT'—Next morning we came to anchor off TYBEE LIGHT near the *U.S.S. Adams,* in the afternoon of the next day arrived at Five Fathom Hole near Savannah—May 9th got the prize in safety up to the town—May 14th the citizens of Savannah gave a public dinner to Capt Warrington & his officers in celebration of the 'Glorious affair of the capture of His Britannic Majesty's Sloop of War *Epervier*'. The entertainment was conducted in an elegant style. Harmony & partiotism prevailed throughout.

Here in a few short terse sentences is related a firsthand account of the famous engagement between U.S.S. *Peacock* and H.M.S. *Epervier*. The ships were fairly evenly matched, man for man, and gun for gun, but the wide range in damage inflicted must be credited to the superior marksmanship of the American gunners resulting from the training insisted upon by Warrington.

The one-hundred-and-thirty-word entry in Rodgers' journal covered forty-five minutes of as furious and terrible a sea conflict as has been recorded in the annals of the War of 1812. What an opportunity for glorious phrases and countless words had James Fenimore Cooper, Richard Harding Davis, or Floyd Gibbons been aboard the little *Peacock* that day!

One would think that after having captured such a valuable and honorable prize that the prize crew would have been well satisfied to get her quickly and safely into a United States port. But no; those five officers and twelve men bared their teeth and snarled convincingly enough to deter an attack of an English frigate and then on the next day, off a well-blockaded coast, had the temerity to stop and board a strange vessel!

On the fourth of June *Peacock* put to sea from New York on her second cruise. The reader can now follow the adventures of Lewis Warrington, Esq., and his now full-fledged crew of veterans by skipping through Rodgers' journal. Routine and repetitive entries have been omitted.

1814

26 June Saw two sail to windward—gave chase—at night lost sight of the chase

3 July Boarded a Spanish Brig from Havannah to St Andora Spain. Same day at ½ past 10 AM made the Island of Flores one of the Azores

4 July Celebrated the Independence of our country between the Islands of Flores & Corvo

6 July While taking water at Santa Cruz saw a sail to the windward dismissed the shore boats made sail in chase—at ½ before 10 PM beat to quarters cleared ship for action—at 10 close aboard of the chase—hove to & boarded her—she proved to be the English Brig *Stranger* from Buenos Ayres to Greenock cargo hides & tallow—mounting 4 guns having thrown overboard 6 in a storm sometime previous—crew including officers 18 in no

7 July Burnt the prize

29 July At 1 PM captured Sloop *Fortitude Capt* Waters, *Wife* & *infant child* from Liverpool to London Cay, salt, crew 6 excluding Capt—took out prisoners & sank her

USS PEACOCK in smelling distance of coal fires

At ½ past 9 PM captured Brig *Venus,* Capt Kennedy from Bordeaux to Glasgow cargo wines, brandy & some few silks mounting 2 guns, crew including some officers in Lord Wellington's Army on their return home little expecting in such a place to receive their parole of honor from the 'Rebel Yankees'! One man an American entered on board the *Peacock*

One can sense the feeling of braggadocio within Rodgers as he penned his proof that this little American sloop was so close to the home fires of the enemy.

How many times did the Waters child start the evening off with the story of that time when the family was captured by Yankee pirates? And of course many a young English subaltern or sublieutenant must have been bored by the barrack-room tales of those Wellington officers!

30 July Captured Brig *Idiona*, Maxwell from Liverpool to Lisbon with salt—crew 13—Sent her to Liverpool as a cartel

31 July At ½ past 9 PM made 'Nigger Head' the southermost part of 'Erin where the Paddies grow'

1 Aug Off the River Shannon captured Sloop *Leith Packet* Capt Watson from Tenerife to Dublin cargo wine, crew 8 in no, took out some wine & sank her. At ½ past 8 captured Sloop *William & Ann* Capt McTess from Glasgow to Limerick with coal—crew 5—sank her

4 Aug Captured Sloop *Peggy & Jane,* Capt Duncan from Liverpool to Limerick with coal & crockery—crew 6 in no—took out some crockery for ships use & destroyed her

7 Aug Farther North than ever before 61 32

14 Aug Captured the Barque *William* Capt Whitway from St Andrews to Greenock cargo lumber—crew 19 in no—Threw her guns overboard & sent her in as a cartel

Excitement surely ran rife when *Idiona* and *William* arrived in port with seventy-eight crew members and the officers from Wellington's army. Lloyd's probably heard about the American 'Pirate' before the Admiralty. Both took appropriate action. Insurance rates soared and dispatch vessels scurried with orders to concentrate patrols in the northern waters. Without a doubt this concentration of vessels in home waters had an important effect on the ultimate progress of the war. Pressure was eased on the American coast. The concentration in Irish waters was futile.

21 Aug In Bay of Biscay. At ½ before 5 saw a sail on weather beam at 5 saw another sail ahead—as good luck would have it we gave chase to the one ahead—at ½ past 9 neared the chase & shortened sail, she looking rather wicked—at 10 beat to quarters & cleared away for action—½ past 10 boarded—chase proved to be the English Brig *Bellona,* Langlois from Getti in the Mediterranean to Hamburg of 6 guns—crew 15 in no—cargo wine, brandy, olives & verdigrease—took out some articles verdi grease & etc. Three men entered on board of us one American one Dutchman (Forester!) & one Italian—same day made Cape 'Furianna'

Apparently the recruiting standards of our Navy in those days were somewhat simplified compared to those of the present day. *Peacock* had picked up four more hands. She had also picked up some 'verdigrease & etc.'!

24 Aug At ½ before 11 saw a sail to leeward gave chase—at ½ before 12 beat to quarters—at midnight boarded—chase proved to be another prize the Brig *Triton* Capt Harvey from St Johns to Lisbon—cargo of fish—crew 7 in no—sank her.

After the long voyage from St. Johns the unfortunate Captain Harvey was captured within a few hours of his destination!

29 Aug At ½ before meridian made *Land* coast of Africa in Lat 31 3 N

1 Sept Ran in towards the Port of Naos of Canary Islands. In the Port lay three English Merchantmen who looked rather Blue on seeing the 'Yankee' Gridiron flying so near them—but they were protected from capture by the neutrality of the port

3 Sept While running for Puerta Ventura captured Brig *Duck* of 2 guns Capt Stevenson from Porto Babras (the Port we intend to make) to Teneriffe cargo Barilla—crew 13 in no including the English Consul Resident at Porto Cabras—sank her

6 Oct This day made *Land* coast of Surinam (South America) Lat 6 11 Long 53 36 of the River Moroin (?) dividing Cayeunal from Surinam

10 Oct In AM Denizen Baldwin (Masters Mate) departed this life after a short but sever illness. He died of a Bilious fever

11 Oct At ½ past Meridian committed his remains to the deep!

Come cheering hope! cerestial cherub come!
Say that his virtues soar beyond the tomb!

Say that with mercy in etheral guise
His white robed Spirit climbs yon spring skies!

12 Oct At ½ past 6 AM saw a sail nearly ahead—gave chase— 11½ brought to the chase she proved to be the English Ship *Mary* Capt Gibson from Point Petre (Guadalupe) to Halifax—cargo sugar, coffee, rum & molasses—crew 18 in no mounting 2 guns—sunk her

18 Oct Boarded Swedish Ship from Gottenburg bound to America put Capt Gibson on board & dismissed her—this ship informed us of the burning of Washington & the attack on Baltimore

22 Oct Gave a spare yard and received some newspapers from American Privateer *Hollins* Capt Stocket—pleased by the account of a glorious victory on Lake Champlain by Com McDonough

25 Oct Heavy Gale of wind—Hove to—at 7 made the *Land*—at 10 Cape Henlopen Light House bore West dist 20 miles—at 12 Cape May W by S½S

28 Oct Cruising along the coast toward Sandy Hook—light breezes

29 Oct Arrived & anchored off the City of New York near the U.S. Frigate *President* Com Decatur—147 days out from Savannah—went ashore and informed all friends well

There is no explanation for the four days of cruising along the coast from the twenty-fifth until the twenty-ninth. Perhaps some of the privateers spoken to had given Warrington warnings of the English blockaders. All hands must have suffered from channel fever cruising so close to home after that long cruise.

2 Nov U.S. Ship *Hornet* arrived through Hurl Gate after being blockaded near 18 months in New London—All hands busily employed in refitting for sea

It could be that *Hornet* was able to escape the blockade at New London by reason of the concentration of English ships in home waters as a result of *Peacock*'s depredations.

1815

23 Jan Stood to sea in company with the U.S.S. *Hornet* & Store Ship *Tom Bowline* Capt Carlton, with a fine breeze from NW

24 Jan Saw a sail supposed to be one of Johnny Bull's Sharpsighted cruisers—did not think it worth while to trouble her or ourselves to chase her

2 Feb At 4 PM saw a sail to the south but night coming on thought it better to stick by the *Salt Junk* in *Tom Bowline* than chase in such weather

19 Feb Sunday—Mustered ships company—Lat 5 26 N Long about 20 6 W—For several days we have had very sultry weather—today got up the deck awnings which we find to be a great relief from the excessive heat

23 Feb Lowered stern boat to ascertain the current but found none—Lat 1 32 N Long 20 9—rigged out a lower studding sail alongside and permitted all hands to bathe—a few minutes after the crew & officers had left the water a *Shark* about eight feet long was discovered alongside, he was immediately baited & caught, in the opening of this voracious creature a live *sucker fish* was found in his maw together with pieces of paper, rags etc which had been thrown overboard a few hours previous

27 Feb Monday—This day crossed the equinoctial line and as 'Dad Neptune' did not think proper to favor us with a visit a double allowance of liquor was served out to all hands that the already initiated Sons of Neptune might drink his health and those not initiated might invoke his special protection—Neptune heard us—was satisfied and ordered Old Borias to give us a breeze as a token of his acknowledgement of us—12 o'clock 00 31.5

13 Mar At 5.30 AM saw a sail bearing SSW gave chase—made her out a Brig—2 PM it being calm the chase distant about 4 miles sent two boats to board her—at 3 boats boarded her—proved to be the Portuguese Brig *Aurora* from Pernambuco coast of Brazil bound to Anquilla Mozambique & thence on a slaving voyage

24 Mar Standing off the Island of Tristan De Acunha—7.20 in the morning sent a boat ashore to see about watering & get necessities for ship—9 the boat returned & brought a report of an action having been fought yesterday off the Island between a Ship & a Brig probably the *Hornet* & also reported that the Brig *Macedonian* Capt Blakeley had been at the Island & given an account that the U.S. Frigate *President* Com Decatur had been captured by three Frigates when three days out—this *ship* we expect to find here.

25 Mar 9.30 *Tom Bowline* made a signal for a strange sail & in a few minutes she was seen bearing NNW—10.30 beat to quarters & cleared ship for action—from her signals soon made her out to be the U.S.S. *Hornet*, Capt Biddle which ship parted from us in chase on 27 Jany.

26 March At 5 PM the *Hornet* came under our stern and gave us three cheers which was returned by three from our ship & was answered by another—sent a boat on board of her which was returned with the news that she had on 23rd in sight of Tristan D'Acunha captured after an action of 25 minutes H.B.M. Brig *Penguin* Capt Dickenson of 19 guns—1st Lt Conner & with but one man killed—Capt Dickenson of the *Penguin* was killed with the Boatswain & about 15 men & 2 Midshipmen & 30 men wounded

13 April At 10 PM took our departure from Tristan D'Acunha the Island bearing SW by W 12 miles dist—having cruised here for 23 days—hopes of the arrival of the U.S. Frigate *President* Com Decatur but from her not joining us I fear the story related by Capt Blakeley of the Store Ship *Macedonian* will prove true.

Rodgers won't give up on the possibility of *President* with Commodore Decatur coming into port. This in spite of the fact that a United States naval officer had left an account of *President*'s capture at Tristan

D' Acunha. It was hard for any young naval officer to believe that Decatur had been taken, even by three frigates!

23 April Eastward of the *Cape of Good Hope* Lat 34 29 at noon—At 5.10 PM it blowing fresh, under snug sail, while in the act of wearing ship, Alexander Gott a Marine was knocked overboard by the gaff, immediately lowered the boat & being a good swimmer after being 15 minutes overboard he was picked up by the boat quite exhausted

The officer of the watch surely had the utmost confidence in the boat crew. Just a month before this incident they had manned two boats and had rowed approximately four miles in one hour. Now, after man overboard they had lowered away and rescued the marine in about fifteen minutes.

27 April At 7.10 AM saw a sail bearing SE by S—made all sail in chase—about 4 PM made the strange sail to be a very large ship—probably a *fat* East India Man—a good recompense for all of our lost time (*if taken*)—at 5.20 PM being dark lost sight of her bearing SSE—cleared ship for action that we might be ready for her in case a breeze should spring up during the night

28 April 1.45 PM being distant from her 6½ miles she hauled her wind to N&E and showed *two tiers of guns*—still our anxiety to finger English *dollars* & English *goods* under the supposition of her being an East India Man, induced us to run over to her—2.30 being about 4 miles from the chase, made her out to all intents and purposes an *English Line of Battle Ship*, not being so solicitious of further aquaintance we hauled our wind to the NW—having chased her for 32 hours & she in her turn gave *us* chase —4 PM leaving the chase—she having hoisted St George's Ensign, an Admiral's flag & various other signals which were equally disregarded

30 April Sunday—Stiff breezes, cloudy & some little rain—No muster—Nobody on Drs list—Ninety seven days out—No prizes—short allowance—*poor fare*—but still have strong hopes and good spirits—natural & artificial—Wind SW—Lat 38 27 S Long 37 48 E

16 May At 7 AM made the Island of Amsterdam bearing SEbyE Dist 20 miles—out cutter & sent her ashore—at 1.15 PM the boat returned with a letter found enclosed in a bottle from Capt Blakeley of the Store Brig *Macedonian* which had been at this Island about 20 days ago—This letter confirms the account heard at Tristan D' Acunha of the *President* having had an action shortly after leaving New York—no more than probable that she is captured. The *Penguin* chased the *Macedonian* 190 miles from Tristan D' Acunha

Rodgers still won't give in completely on the idea of *President* being taken. The letter left in a bottle by Captain Blakeley gave a full account of the action.

Blakeley must have been a good sailor to escape from an English naval brig with a store ship.

9 June — At 3 PM made the Island of *Java* bearing North dist 15 miles—Sultry throughout the day with heavy dews at night—thunder lightening & rain—great number of natives on shore—Lat 8 S Long 108 55 E

11 June — Sunday—5 men on Drs list—excessively sultry throughout the day—during the night thunder lightening & rain—caught a shark today on which we dined & tho the flesh was *rank* being *fresh meat* we esteemed it a great luxury

13 June — 8.15 saw a sail bearing NNW thus are our hopes again raised—10 lost sight of Java Head bearing SEbyE—at Meridian Sumatra bore NbyE—nearing the chase which proves to be a large ship

13 June — At 2 PM the chase tacked & stood for us & hoisted English Colors—beat to quarters & shortened sail & cleared ship for action—at 2.30 fired Long Tom at her—at which she down her colors & hove to—sent a boat on board—she proved to be the English East India Company Ship *Union* 6 guns, formerly the *Telegraph* of New York now of Calcutta & from there having touched at Pulo Penang & other places on the coast of Sumatra bound for Batavia for convoy for England—cargo peppers, opium, gum Benjamin or Benzoin, raw silk, saffron, piece goods, wines etc—the most valuable we have yet taken—She had some gold worth about $5000.00 ! ! !—sent boats on board to remove the valuable goods etc etc on board —Kept prize in co during the night & the next day stood in for land—Capt Hall crew of Lascars & Malays

16 June — At anchor receiving goods etc etc from the Prize—3.30 received the prisoners on board—4.30 set fire to the *Union*—she burned upwards of 12 hours

What a strange sight this must have been to the natives! And what a feeling of exultation must have beaten in the hearts of this intrepid crew as they watched this flaming defiance to the might of England. This lone, tiny, American vessel flaunting the flag of the former English colony and destroying a ship of the powerful East India Company in waters that for years had been known as the East India Company Lake!

Just one hundred years later another tiny vessel was to flaunt a defiance against the might of Britain in these same waters, Captain Felix Von Luckner in *Sea Eagle*.

21 June — Beat up to the channel between Java & Princess Island & at 10 o'clock came to anchor in *New Bay* in 8 fathoms sandy bottom

22 June — Employed watering & overhauling rigging—at 3.30 saw a sail working up the Straits—up anchor & gave chase—5 fired & brought to the chase—she proved to be the English Ship *Venus* Capt Boone from Isle of France to Batavia in ballast—having a few articles which proved to be of great use, such as, shoes, stockings, handkerchiefs, razors, combs & about 5000 $ in

'Hard Dollars' stowed away in barrels of pork—crew 56 Lascars—9 anchored in 25 faths off 'First Point' [Java Shore] the prize in co

24 June Sent crew of *Union* on board *Venus* intending to give her up as a cartel to go to Batavia

25 June Gave crew liberty to go ashore & wash clothes etc etc—shared the money found in the prizes reserving the half for the Government—by the *Venus* we hear that a Treaty of Peace has been made but do not know the terms—tis rather doubtful

28 June Anchored at 6.15 PM in 15 faths muddy bottom near Anjer Point—6.15 AM saw a sail bearing West, weighed & made sail in chase—at 7 AM a great number of Malay Proas came alongside bringing fowls, turtle, cocoanuts, yams, birds etc for trade which they sell very cheap—fowls 30 for a dollar & other things in proportion—Came up with a strange sail & brought her to & proved to be English Ship *Brio de Mais* Capt Grover from Isle de France & Batavia in ballast— crew 37 Lascars—She informed us a Treaty of Peace had been signed by the Prince Regent but hostilities were not to cease till ratified by our President which from the terms will or never ought to be the case, terms—no fishing off Grand Banks, no trade East of Cape of Good Hope—! ! ! if such is the case, we are the last ship East of the Cape & so we will make the most of our time—took prisoners out & destroyed the prize—5.30 PM saw a sail to which we gave chase—she proved to be the cartel *Venus*—put the crew of the *Brio de Mais* on board of her & permitted her to proceed—from the last ship we took about *9500 $*

1 July 1.45 PM saw a sail a ship/while beating through the Straits/at anchor in Anjer Roads—2.15 saw another Ship & a Brig both at anchor—2.30 the Brig weighed & stood out of the Road towards us—the ships showed Portuguese & Dutch colors the Brig showed none—5.15 on nearing the Brig & our showing English colors she sent a boat with 2 officers/ her master & a Lieut of Marines/ the Master Intendent also came off at the same time from the Fort under the idea of our being an English Sloop of War—on being informed of *their mistake* they were ordered below—5.30 came up with the Brig & on discovering his error the Capt of the Brig sung out 'There is peace with America' but on being ordered to haul down his flag/as a token/ he refused, on which we fired a broadside into him which he returned & struck his colors—she proved to be the Honorable East Indies Company's Cruiser *Nautilus* of 16 guns, bound from Batavia to Calcutta with dispatches & 30,000 dollars in specie & copper to the value of 100,000 $! !—Her Commander *Boyce,* first Lieut, Lieut of Sepoys/Marines/ & 5 men wounded & 6 men killed—her rigging a good deal cut—we received no damage a few shot holes only in our sails—took possession of the prize—the Master Intendent informed us that a Peace had actually taken place & that he could produce proof. 7 took out part of the prisoners—9.50 anchored in 12 faths muddy bottom Anjer Point bearing NE. [Marginal note in journal—'Into & over this Brig we fired a salute of 17 guns'] 7 AM sent the Master Intendent ashore to bring off proof sufficient to cause us to liberate the Brig—9 we sent

the prisoners back to the Brig—10.30 the M.I. returned bringing off sufficient evidence of a Peace having been ratified on 18th Feby 1815 in consequence of which we will give up the Brig—thus are our bright prospects blighted. In this Brig an American called John Dean alias John Crow was found & fighting against his country—he was brought on board to be taken to America for trial

2 July Sunday—at anchor—3 gave the *Nautilus* up to the Master in consequence of yesterday's news with orders to run into Anjer Roads—4 the *Nautilus* weighed & stood into Anjer Roads—Mustered ships company—4 men on Drs list—our Capt informed us of Peace having been made—in consequence of which we shall run for the Isle of France or Bourbon to get Bread etc etc—in the meantime to be on half allowance—sultry day—the thermometer on deck at 1 PM stood at 92—at 8 AM the Portuguese Ship in the Roads got underway & stood down the Straits bound to Rio Janeiro—9 weighed & made sail to SWd *HOMEWARD BOUND* ! !

4 July Fine breeze—& cloudy—Lat 7 49 S Long 100 36 E—Since taking the *Union* & on our passage up the Straits we fared 'sumptious by every day'—every variety man could desire—mutton—turtle soup—fowl—fresh pork—cocoanuts—yams, potatoes, pumpkins, ducks, coffee, sugar & many other luxuries—From the Commanding Officer at Anjer Point we hear that General Jackson has beaten the English at New Orleans—their loss great & that the *President* Frigate has been captured & had arrived at Halifax.

13 July Commenced squally & a heavy swell—soon after Meridian it coming a blow—& shortened sail—5.40 it blowing fresh going at a rate of nine knots *Edward Rodgers* seaman, while in the act of getting in the royal steersail booms of the Foretop Gallant Yard, was precipated headlong overboard & tho every exertion was made to save him he was unfortunately drowned—'In the midst of Life we are in Death'—During the night it blew a Gale from SE accompanied with very violent squalls & a very heavy swell—got the ship snug

16 July Sunday—Mustered ships company—4 men on Drs list—light trade—this day paid the crew—the short allowance money for this cruise amounting to 11 dollars

27 July Thursday—at anchor St Denis Bourbon Island—Spent the day ashore—Dined at the Hotel—well pleased with French dinners & Vin Du Bordeaux—with two or three words of French in mouth & Spanish L'Argent in fist we meet with every attention we could wish. We read accounts of Bonaparte having again resumed the reins of government and driven poor Louis from the Kingdom—Viva L Emporeur if his aim is annoy the British

4 Aug At anchor St Paul Bourbon Island—gave half the crew liberty to go on shore—after paying their *vows to Bacchus* they returned in *good trim*—vim—vivemus—vivamus ! ! !

6 Aug Sunday—pleasant—part of the crew on liberty—Sent daily about a dozen men on liberty till all had had their turn ashore

25 Sept! At 7 PM John Scott seaman fell from the foretop on the forecastle & providentially only with the fracture of the left knee pan

28 Sept This day at noon the suns lower limb was vertical, the declination 1 48 corrected—What is the Lat? What is done with the semi-diameter & dip? there being no refraction—the Long per accnt 25 51 W & per lunar at 9 AM 25 44 W—Can the suns centre be higher than 90 degrees?

Well, young Rodgers did have a problem here! The navigation text books of those days gave full explanations of how to solve this 'under the sun' sight but of course not having much actual practice Rodgers probably had some difficulty in applying the proper signs to the factors involved. He probably even followed the sun over the meridian and recorded an altitude of more than ninety degrees as has many a modern navigator.

15 Oct Sunday—Spoke the English Brig *Speculation* from Quebec to Jamaica out 29 days—gave us papers containing accounts of Decatur's having been successful up the Straits—of Peace with Algiers & *miserable dicta*—of Bonapartes having given himself up a prisoner to the English—*tempora militant*?—5 men on Drs list—cloudy weather with frequent squalls & rain—this day crossed the Tropic of Cancer *4th time*—Lat 24 10 N Long 61 5 W

19 Oct Saw two schooners & 1 Brig standing to SEd—brought to & boarded the Brig—she proved to be the *Mary* of & from Philadelphia bound to St Croix out 14 days all well—got some papers—Lat 29 1 N Long 65 12—from her they inform us of the particulars of Bonapartes fall & of being sent to *St Helena*

30 Oct At 7 AM made the *LAND*—bearing West—10 got pilot on board & beat up to the town & at 5 PM anchored off the Battery—in 6 faths—went ashore & FOUND *ALL* FRIENDS *WELL!*

8 Nov Took the ship to the Navy Yard—unbent sails & dismantled her—at the Yard lay the *Java* & *Hornet*—discharged those of our men whose times were expired

18 Nov Applied for a furlough intending to enter the Merchant service—

27 Nov Recd from the Navy Department a furlough for one year dated Nov 24th 1815 – – With a heavy heart took leave of my shipmates with whom for two years I had lived on terms of sincere friendship & with whom I had 'braved the battles storms & tempests fury' – – we part perhaps ne'er more to meet on this sublinary service ! – – –

30 Nov Left New York on a visit to my relatives & friends in New Jersey & pennsylvania – – While in Pennsylvania visiting the scenes where first I knew happiness where my first impressions were received & my first knowledge of *myself* obtained – – the pleasant shades & verdant fields where breathing the pure air of innocence I felt I was not born for myself alone – – – –

William Tennant Rodgers, United States Navy, Midshipman, returned from his year of service in the merchant service in 1816 and served intermittently in our then decadent Navy between long periods of leave of

absence until April 1827 when he resigned as a lieutenant to which rank he had been promoted in January 1825.

Peacock served faithfully for many more years in the Navy. Under Commodore James Biddle and later Commodore David Porter she operated in the pirate-infested waters of the West Indies. Later, from Peruvian waters she sailed under command of Captain Thomas ap Catesby Jones to the Galapagos and Marquesas Islands and on to Tahiti being the first American man-of-war to visit that island. Captain Jones assisted in quelling disturbances between the natives of Tahiti and Honolulu and the crews of the whalers before he returned to Callao via the Gulf of California. In 1832 *Peacock* was on the China coast and at Batavia in the East Indies, the scene of her victorious cruise during the late war. In 1835 she was stranded on an island near the Arabian coast but managed to free herself by throwing overboard some of her guns and stores. In 1838 as a unit of the Wilkes exploring expedition en route to the Antarctic she again visited some of the familiar ports in the Azores and South America. The following year she identified land in latitude 67° south and barely escaped disaster in the ice. Late that year she began the journey home by way of Sydney, Australia, New Zealand, Fiji, and the Hawaiian Islands. 'In 1841 while making a survey of the American North West Coast she was lost off Cape Disappointment.'[3]

[3] Dudley W. Knox, *A History of the United States Navy* (New York, 1936).

Commander R. W. Mindte's introduction to salt water was in U.S.S. Seattle, *last of our Navy's large coal-burning vessels. Various types of unbroken sea duty followed for nearly twenty-five years, including duty as skipper of tuna clippers running from San Diego to the Galapagos Islands fishing grounds. He has been a keen student of Naval history for many years and has written many articles and stories on that subject for leading periodicals. Subsequent to writing this article Commander Mindte was retired from the Naval service for physical reasons. He resides in Rockville, Maryland.*

The Steamship Historical Society of America announces the publication of *Advertisements of Lower Mississippi River Steamboats, 1812-1920.* This basic reference work in American steamboating reproduces newspaper advertisements mentioning over 1,000 steamboats. Leonard V. Huber, the compiler, has also supplied a useful and comprehensive index. Orders will be accepted at $4.50 per copy until 1 September 1959 and $5.00 after publication.

Coolies in the Ship Rhine

BY P. W. ROBERTSON

INTRODUCTION AND NOTES BY JOHN F. LEAVITT

MANY people remember the various ships and barks engaged in the export lumber trade from Boston to the River Plate in the years before, during, and just after the first World War. One of the best-known ships was *Rhine,* owned by N. W. Rice & Co., which survived until 1925 before being broken up.

This vessel had originally been one of a fleet owned by James Nourse & Co. of London, engaged primarily in the transportation of Indian coolies to British plantations in various parts of the world as contract labor.

Nourse's ships were all named for rivers—many of them were built by Russell at Greenock, Scotland, of iron. *Rhine* was one of seven sister ships built between 1884 and 1887. She was of 1,691 tons, and her principal dimensions were 257.2′ long, 38.3′ beam, 23.1′ depth, registered measurement. These ships all crossed a main skysail and carried topmast and lower studding sails as long as they were in the coolie trade. Under Nourse's ownership, they were painted with black bulwarks, black painted ports on a white band below that, and gray hulls down to the waterline. When *Rhine* came to Boston, she was then painted all gray.

Through a peculiar combination of circumstances, it was recently learned that Captain P. W. Robertson of New South Wales, Australia, served his time as an apprentice in *Rhine* from 1899 to 1903. Captain Robertson had written to learn what became of his old ship and in the course of correspondence volunteered to give a brief account of the coolie trade as he knew it.

Basil Lubbock presented some material on the coolie ships in his book, *Coolie Ships and Oil Sailers,* but on the whole, there have been very few reminiscences on the subject by those engaged in the trade. Therefore, Captain Robertson's notes may be of interest. His letters indicate a lively sense of humor and his personal history is interesting, though given only briefly.

His account is as follows:

On the fourth of July, 1899, I joined the full rigged ship *Rhine* belonging to James Nourse & Co. of London. This firm owned a fleet of fifteen vessels, consisting of fourteen ships and one barque, each being of approximately 1600 tons burden and all of them named after rivers.

Nourse had a contract with the Indian government for the transportation of coolie labor to and from the West Indies and Fiji Islands where they were employed on sugar plantations. The term of labor was three years, at the end of which time, the coolies received transportation back to India.

The ships were well built and for the most part, well found and their sleek gray and black hulls with painted ports and lofty rigs attracted attention in any port of call. The coolies were well treated and well fed, in fact more so than the crews.

Calcutta was the embarkation port for the coolie trade, chiefly because the coolies were for the most part Byots (Hindu peasants) natives of southern and central India. The northern tribes such as Pathans, Afrides, etc. are not only unsuitable for agricultural work but would not under any circumstances, hire out as coolies.

Each consignment of coolies consisted of about 650 men women and children. In addition, there was a ships crew of about forty officers and men, a European doctor and two native 'compounders' (chemists or pharmacists), a pretty large crowd for a 1600 ton ship.

An average voyage took about a hundred and twenty days and to feed so many people for so long a time, it was necessary to carry a huge amount of stores. In consequence, the ship was loaded with food stuffs such as rice, dhally gram etc. the food being stowed in the lower hold, the 'tween decks being fitted for coolie accommodation. Vegetables such as potatoes, onions, pumpkins, etc. were carried under a tent erected on top of the after deckhouse and a number of sheep were penned up on the foredeck. In addition to the fresh water stored in the ships tanks, drinking water was obtained by condensation from salt water. For this purpose, there was a steam donkey engine and from it was obtained steam used for boiling food for the coolies.

Rations were given out to the coolies twice a day—at eight in the morning and four in the afternoon. The natives squatted on deck in twos at meal times, each having a tin dish and water jar in front of him. Along the rows passed the messmen ladling out curried meat and vegetables, rice and an issue of water.

Though they eat with their fingers and have a few habits which are repulsive from an occidental point of view, the Indian coolie is by no standard of conduct, a dirty person, if circumstances permit him to be otherwise. He cleans his teeth and washes himself completely once a day as long as the weather allows him to come on deck to do so. On the other hand, when they first come on board, many of them are verminous and their practice of delousing themselves on deck by no means endeared them to the crew, who suffered accordingly.

In fine weather, the coolies, if the work of the ship permits, are allowed on deck during the daytime but at sunset, all are sent below to their quarters in the 'tween decks. Here they sleep and stow their meagre possessions on or under a wide wooden platform built about four feet above the deck and running the entire length of the hold on both sides. At a point about halfway along the deck, a strong barrier or partition divides the hold into two large compartments. The after section was

for the married couples, single women and children and the forward section for the single men and boys. The barrier was called the 'fornicating screen' and I always had some doubt as to its efficiency.

Six eight-seat toilets, four for the men and two for the women, were located on deck for fine weather use. Portable units were provided for use during bad weather and at night but this did not prevent the decks being befouled at night as many a cursing sailor discovered as he clawed about in a coil of rope in the dark.

On hot, moonlit nights, if calm, the coolies were allowed to remain on deck for an hour or so after sunset and their community singing with a tom-tom accompaniment rendered the night hideous. The men were encouraged to exercise themselves at wrestling and gymnastics. The former sport was something of a national game in India and often there were several good wrestlers among the coolies. Another popular pastime was a form of hand wrestling, the opponents sitting opposite each other, both having the elbow of their right arm on deck and interlocking the fingers of their clasped right hands. The winner was the man who was able to force his opponents hand to the deck. There were also many good gymnasts among the coolies and it was common to see them jump forward and back through their clasped hands or perform many other similar feats.

Generally, the mortality rate on a coolie voyage is low. The doctor, of course, does his best to attain this result for apart from a humanitarian point of view, the financial gain was considerable for him. He received a guinea a head for every coolie landed at the terminal port.

However, deaths do occur on a voyage and frequently it happens that when a native becomes sick, regardless of whether it is actually serious or not, he makes up his mind that he is going to die. In such cases, nothing medical science can do will save him.

After death, the body is sewed up in an issue blanket with a piece of holystone at the feet for a sinker and placed on deck at the after end of the poop. Here it stays for at least twelve hours, in compliance with some regulation in effect in the trade. When the coolies are below at night, the body is then pushed overboard without ceremony or sorrow (if one excepts the doctor who has thus lost a guinea.)

On arrival at the debarkation port, the coolies are taken to a quarantine station to be 'vetted' and later on, are drafted to the various plantations whose owners have engaged their services.

Captain Robertson's career at sea was varied and in some respects very unusual, for he says himself that he always preferred variety to the steady plodding which is the usual road to advancement. He claims that his career in general was not particularly interesting but it could not have been exactly dull.

Born in London, he was living in Kingston, Jamaica, when he signed his apprenticeship indentures. His father was there as Marine Superintendent for the Atlas Co. of New York, a branch line of the Mersey Shipping Co. of London and Liverpool.

In outlining his voyages in *Rhine*, Captain Robertson says:

We left Kingston in July 1899 for Barbados, Guadaloupe and New York. There we loaded for Calcutta, then took coolies from Calcutta to Fiji and returned to Calcutta. We then took coolies from Calcutta to Demerara, West Indies and went on to Trinidad to load a cargo of pitch for Norderham, Germany, arriving November 26, 1901. My second voyage began at Liverpool on February 20, 1902 when we sailed for Calcutta. We then took coolies to the West Indies again and returned to Queenstown, Ireland on January 10, 1903. It must be remembered that the coolie ships often lay three or four months in Calcutta awaiting the 'Coolie Season,' viz. the Northeast monsoons. All hands forward were paid off and only we boys and the mates were left for maintenance work.

At times, the coolies were pressed into service to assist the crew, and Captain Robertson remembers one occasion when *Rhine* called at St. Helena to pick up fresh vegetables, they helped bring her in 'Man o' War' fashion. He says: '. . . Old Kimball, the mate, had trained some fifty-odd male coolies to haul on ropes as directed and with the whole of the regular crew aloft and the coolie gang on deck, we swept into the anchorage with everything set to the main skysail. At the mate's word, halliards were let go on the run, sheets let fly and the clewlines and downhauls etc. were manned by the coolies. One moment she was canvas clad to the trucks and the next, the yards were bare as she lost way and rounded up to the anchorage.'

He was with three different skippers in *Rhine*—Watson, Watkins and Hesse, the latter a native of Bremen, Germany, one of the few foreign-born skippers, probably, in British ships.

Regarding further experiences in sail, Captain Robertson goes on:

The *Rhine* was the only sailing ship I was in for any length of time but I made a round-the-world voyage in a brute of a low-powered single screw steamer that was brigantine rigged and a man-killer. We sailed from London, non-stop to New Zealand, via the Cape [Good Hope] and then home again around the Horn, calling in at Rio. The Old Man had been most of his life in sail and he tacked that damned ship as though she had no engines at all. There were only eight hands before the mast and due to a difference of opinion between myself and the Board of Trade examiners on a point of navigation, I was one of them.

He passed his examinations for second mate, however, in 1905 and joined the famous four-masted bark *Loch Torridon* in that capacity but after working by her for several days 'found that the skipper and I were not soul-mates' so they parted company.

He sat for his mate's papers in Bombay in 1909 and his master's license in Melbourne in 1915. In his own words:

I swallowed the anchor in 1923 and from that date until I retired in 1948 was super-

vising inspector of explosives for the Victorian State government in charge of the Explosives anchorage at the port of Melbourne. I also acted as relieving pilot and harbor master at the out ports. Always preferring variety to advancement during my sea career, I switched ships and trades as fancy dictated until I got married. I served as junior officer in mail boats and tramps in all parts of the world but principally out east. After marriage, I served as Chief Officer on the Australian coast and finally as master of two different government vessels. I was in the South Sea Island trade for a few months as second mate of a tiny steamer trading around the Fiji group. We had a crew of Solomon Islanders who fired down below or took a wheel watch as their fancy dictated. It didn't matter much anyhow as their main job was as crew of the surf boat and at that, they were 'super.' The supercargo and I were in charge of the boats which, deeply laded, were hectic to handle in the surf at times—especially on dirty nights.

Captain Robertson officered ships of both the Aberdeen White Star Line and the British India Steam Navigation Co. and met his wife while she was a passenger on the S.S. *Salamis* during a passage from England to Australia in 1910.

The doughty skipper is now engaged in the arduous task of writing a book (a sea story) and by his own account is having a harder time getting the flaming ship to port, than he ever had during his more active career.

John F. Leavitt, who brought Captain Robertson's reminiscences to our attention, began his career as a deck hand in Maine coasting schooners. He went on to newspaper reporting, and for the last twenty-two years has been associated as a draftsman and broker with yacht design and brokerage firms in Boston. His avocation is maritime history and he is a distinguished marine artist.

Thomas W. Lawson Masts

For many years there has been considerable discussion concerning the names given to the masts of the seven-masted schooner *Thomas W. Lawson*. The following letter from Captain Elmer E. Crowley, *Lawson*'s master, should answer the question once and for all. The letter was addressed to Mr. Charles H. Taylor, publisher of the *Boston Globe* and well-known collector of marine paintings.

October 1, 1932

'My dear Mr. Taylor:

In reply to your letter of September 29, the *Lawson* was equipped with telephones only from the cabin to the Engineer's and Steward's Departments. The Masts were designated as Fore, Main, Mizzen, and Nos. 4, 5, 6 and Spanker.

Very truly yours,
(Signed) Elmer E. Crowley.

Notes

Lines of *Spray*

The recent article on *Spray* and Slocum reminds me of a story about the published plans of *Spray*.[1]

When I was a very young draftsman I worked for Charles D. Mower, naval architect, in New York. This was about 1919-20. Mower had been naval architect for *Rudder* magazine, succeeding Charles Davis, when Fleming Day was editor. Here is the yarn Mower told me, as well as I can recall, about the plans of *Spray*.

One day Slocum came into Day's office and asked to have the lines of *Spray* taken off and drawn up for publication. Day sent Mower to the boatyard where *Spray* laid, expecting to find her on the railway. Instead she was afloat, so Mower measured up the hull above water, the rig and the deck arrangement. He then told Slocum to let him know when the boat was hauled out so that the job could be completed.

They did not hear from Slocum for some time, but finally he came in with a half model which he stated had been made for him by the owner of the boatyard where the boat was finally hauled up. As the plans were required immediately the lines of the half model were taken off and fitted to what Mower had recorded earlier. These are the published plans in Slocum's book.

Later, Mower met the boatyard owner and asked him if he had taken off the lines. The boatyard owner said no, that he had merely measured length, beam and depth, and a good look at the boat, then had made the half model, 'by eye' and the basic measurements.

Obviously the published lines of *Spray* are not accurate and are, at the very best, a mere approximation.

Mower was a very reputable man and truthful. I know that he told this story many times; the late Charles Hall of *Yachting* knew the yarn. The 'faking' of the lines of *Spray* undoubtedly caused much distress to those who attempted to build replicas, or like Andrade, attempted a scientific analysis of her form and coefficients as a guide for explanation of Slocum's reports on her behavior.

My own opinion, for what it is worth, is that *Spray* was a pretty poor boat with a first-class seaman aboard. I imagine she was overwhelmed in a white squall when Slocum was asleep or unconscious for some reason. I think the foregoing story should be made known before others follow Andrade, etc. I told the late Jack Hanna this story but he was very reluctant to give up his conception that the published drawings were 'near enough.' I imagine that will remain a popular reaction to this statement.

HOWARD I. CHAPELLE

[1] W. M. Teller, 'Postscripts to The Search for Captain Slocum,' The American Neptune, XVIII (1958), 189-200.

Repel Boarders

Some years ago, The American Neptune published an interesting article, 'The Attack on the Marquis,' which related how an American pepper ship was assaulted by pirates in waters off Java.

It is interesting to recall that not only were our pepper ships attacked by Malays and Dyaks in the South Pacific but our whalers were similarly greeted with creeses and spears when cruising off the Java coast in pursuit of Moby Dick. The journal kept by Robert Ferguson, Harpooner to the Third Mate of the barque *Kathleen* during the years 1880-1884, recounts in considerable and graphic detail such an encounter in

which the Malays attempted to board two whalers simultaneously. Two weeks before the incident in question, *Kathleen* fell in with the barque *Osceola* of New Bedford and both cruised in company until *Osceola* drew ahead to begin her approach to Lombok Straits. What happened subsequently can be best told by quoting from Ferguson's journal:

Thursday, July 14, 1881

The weather was very hot and as we approached the land, rather high land, the wind which was strong, became light. The *Osceola* was about a mile ahead of us and gaining in the light wind. I worked on my checkerboard all forenoon except for two hours when I was at masthead.

At one o'clock it was reported that the *Osceola* was entering Lombok Straits. When the *Osceola* was opposite Bandit Island, our man at masthead reported her in trouble as the flag at her peak was upside down and that she had no wind.

The captain took his spyglass, turned to the mate and said, 'Canoes are swarming around the *Osceola*. We had better go to her quick.'

The mate rushed the order to get the signal gun out of the lazaret because Malays in sixty or seventy large canoes had attacked the *Osceola*. As our ship drew nearer, we could see the canoes, filled with big brown men, armed with spears and knives. The lookout at masthead called out that if the wind held out we would reach the *Osceola* in ten minutes.

The mate, captain, and cooper were stationed on our quarter, the fourth mate with his crew forward, and Mr. Young and Sam Hazzard in the waist with their crews. Mr. Gifford told me to fill the try pots with water, fire up under them, get the water boiling and make haste, using my boat's crew to help. He gave me two muskets and told me to get lances out of the boats. I was then to get the deck pump, a small force pump, and have two men man it when the water was boiling.

He said, 'Bob, don't let any of those natives on board. Shoot to kill. Scald as many as you can.'

There was a good gang forward with Mr. Reed and Mr. King, all armed with muskets. The captain, cooper, steward, and cook were all aft. Frank Gomez got busy firing whale scraps, and the pots were soon boiling. Just as we passed Bandit Island at the mouth of Lumbok Straits, ten large canoes dashed towards us. With the small cannon, the captain sank one alongside the ship. Mr. Young shattered another with a whale bomb gun and killed about six Dyaks or Malays. Some of the natives tried to climb up the side of the ship, but as fast as they clutched the rail, the cooper chopped off their hands. The steward shot one with a musket against his breast. Two large canoes came alongside where I was stationed by the fore rigging and try works.

I sang out, 'Pump, Fernand, pump hard,' and squirted the scalding water back and forth on their bare backs. I had to use a piece of canvas to hold the nozzle of the hose, it was that hot. The two canoes were emptied mighty quick. The natives dove and jumped over into the sea with screeches and yells that did not seem human. Three canoes cut under the bow and Mr. Reed lanced the men, one at a time. Mr. King shot them as fast as they stuck their heads above the rail. Peter was busy loading muskets for Mr. King.

We finally got down to the *Osceola*. She was hard pushed but we soon had the Malays going. The whale bomb gun and the little signal cannon sank about twenty-five canoes. What Malays were left started to paddle for shore as fast as they could. I tell you, they had a dread of the scalding water, for they were all naked except for a waist cloth. When I squirted the boiling water on their backs, it peeled off the skin and they jumped overboard with unearthly yells. These Malays are fine, big, strong, powerful looking men, tall and broad shouldered.

The *Osceola* was laying aback and I suppose waiting for us to come over. After I went to masthead, the captain lowered the starboard boat. It began to leak. One of the natives had run a spear through it. It had to be hoisted and the cooper had a job. The officers lowered the larboard boat and went gamming on board the *Osceola* to find out how she fared after the attack. They had four men killed, and half of the crew and all of the officers were wounded. Mr. Reed said when he came back that it looked like a hospital ship. Six of our men on the *Kathleen* were wounded, not dangerously, mostly on the arms. Mr. King, Tommy Wilson, and Ben Butler were among those hurt. Tonight we got through the Straits and out into the Java Sea. We got well off shore, shortened sail, cleared up the decks, and kept a sharp lookout all night.

Ferguson's journal for the day following makes no further mention of this bloody encounter which was probably viewed as a time-consuming diversion from the real work at hand for he simply records: 'I was dozing in my bunk when I heard the cry from masthead, "There she blows, a school of small whales." ' There was no time now to think of Malays and Dyaks for here was Moby Dick; here was the sort of action they had sought in the Java Sea. The two ships were still in company and again they took concerted action but this time they were the attackers. *Kath-*

leen lowered away four boats while *Osceola* put over three, but the wind was light and the boat crews had to row for miles to reach the disporting cetaceans. Quite a fight ensued with two boats from *Osceola* stove in but in the end each boat got a whale, although the journal notes that they were small. Such modesty in recounting the stirring events of two successive days is indeed refreshing in contrast with the claptrap attending the reporting of a routine maritime event today. But, those were the days of iron men in wooden ships, a breed quite distinct from their modern counterparts in iron ships.

A few notes on *Kathleen* should be of interest. She was a barque of 312 tons built in Philadelphia in 1844 for the merchant trade but soon after fitted for a whaler. For 57 years, under successive owners, she was a whaler until her sudden and dramatic end in the South Atlantic. In March 1902 while cruising on the 12-40 Ground, a thousand miles off the coast of Brazil, a huge whale surfaced not five hundred feet away on her quarter and with great speed made for the ship. A harpoon fired at it missed and shortly afterwards the whale struck *Kathleen* with such force that she filled rapidly, her boats getting away just in time before she disappeared beneath the waves. Thus passed *Kathleen*, perhaps in just retribution by the leviathan that she had pursued for so long and so often conquered.

CAPTAIN EDGAR K. THOMPSON, U.S.N.

The Changed Meaning of *Cargar*

The somewhat obscure Spanish of the Columbus voyage reports may never yield a satisfactory solution to the landfall problem, but it is possible to decide whether *cargar* means to set a sail or to furl it. The solution is clarified by the following passage from p. 138 of Diego Garcia de Palacio's *Instruccion Nautica* (1587):

Cargadera, es vn aparejo guarnido con dos poleas à cinco guarnes, la vna enla liebre mayor del racamento mayor: y la otra al pie del arbol cõ que cargan, y ateſſan para que amayne bien la verga, y bela mayor quando ay mucho viento, y lo propio el trinquete;

which I translate to read:

Cargadera is a tackle rigged with two five-fold blocks, one on the main rib of the main parrel: and the other at the hounds of the mast, with which they hoist and haul taut; by which the yard and mainsail may lower right down when there is too much wind; and the same for the foresail.

Nowadays *cargadera* means a brail, but it is clear from the above that originally it was the halyard of the lower yard. When the lower yards became fixed aloft, they had to be furled by hauling up the foot of the sail instead of dropping the head. The tackle retained its name (in Spanish), but the verb for operating the tackle (*cargar*) reversed its meaning. In 1492 and 1587, to haul up the sail (*cargar la vela*) meant to hoist it or set it; nowadays *cargar la vela* means to brail it up or clew it up, that is, to furl it.

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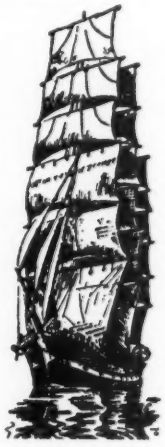

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